LARGE-CLASS PEDAGOGY

Interdisciplinary perspectives for quality higher education

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INTRODUCTION

Large-class environments are a reality for many who teach at higher education institutions around the world. Such environments are commonly believed to pose real challenges for educators and students alike: the former, because they seek to deliver a meaningful learning experience; and the latter, because they not only seek to gain knowledge, but also to develop critical thinking skills. Indeed, large classes pose a potential threat to the quality of the educational environment and may have particular ramifications in developing countries, where higher education constitutes a core dimension of the economic and societal development process. The link between quality education and socio-economic development is almost a truism today, and it is safe to assert that quality education is a key component in the development of all countries and can be correlated with improved income levels and economic growth (UNESCO 2005). The provision of quality education is considered to instil key aptitudes and attitudes necessary for economic growth, from essential literacy and numeracy to (equally importantly) motivation and perseverance (UNESCO 2005).

The notion of a citizen who is literate; capable of reasoning with numbers; and enthusiastic about, and able to stick to, the task at hand speaks to a type of person who is an active learner. Active learners think critically about their environment and consider knowledge to be an evolving state of being, where new information can fundamentally refocus one's understanding of and approaches to everyday phenomena. If, then, quality education is in part defined by the presence of these characteristics, how does one instil them in learners in a context that appears to result in the opposite?

This volume seeks to challenge present-day perceptions that large-class learning environments are void of any pedagogical value. As one of the first books of its kind, it guides the reader through the conceptual issues facing large-class teaching in higher education environments, such as the role of the lecture as it relates to large classes.

This approach is largely rooted in the experiences of scholars and practitioners in developing country contexts, and is interdisciplinary, considering as it does strategies adopted in social and biological sciences, media studies, library sciences, learning support, and education. The insights offered in this book not only address theoretical and conceptual issues, but also provide practical insights for those faced with teaching and supporting large-class environments in higher education.

CONTEXTUALISING THE PROBLEM OF LARGE CLASSES

There is a long-standing belief that the number of students in a class affects the quality of the learning environment (Ehrenberg, Brewer, Gamoran & Willms 2001). In particular, large classes are believed to correlate with low student performance. However, class size in and of itself is not a distinguishing feature of student performance; instead, class size matters in relation to education goals and the quality of the educational experience. In higher education, education goals move beyond simple knowledge acquisition to promoting student engagement and higher order cognitive functions – characteristics of deep learning. Here, class size does matter and can affect the quality of student learning (Cooper & Robinson 2000; McKeachie 1980; Mulryan-Kyne 2010).

Consequently, we define a large class not in terms of a numerical threshold, but rather as an environment where the quality of student learning may be negatively impacted by the number of students in the class. Given the diversity of learning contexts that may exist – varying approaches to and styles of learning, unequal access to teaching and learning support mechanisms, unique disciplinary milieus, and developed vs. developing countries – a large class may be defined in different terms depending on the discipline and/or the pedagogical needs of the learning environment. For example, in theatre studies, any class with more than fifteen students may be considered large, whereas a first-year biology class would be defined as large if the number of students exceeds a hundred; and a higher education institution with limited access to teaching technology may have a different opinion from one with ample technological resources when it comes to what constitutes a large class. While we do not want to discourage assigning numerical thresholds for conceptual purposes (as some of the authors in this volume do), we consider the concept of a large class to be broader and wish to advance an interdisciplinary debate about how to cope with these environments, as opposed to imposing a numerical shackle. Most of the chapters in this volume provide deep insights about fostering teaching and learning in large classes and in varying disciplinary contexts.

Given the clear link between higher education, health, empowerment and economic development (Bloom, Canning & Chan 2005; OECD 2008; World Bank 2012), there is increasing pressure in many countries to enrol as many students as possible in higher education. Producing more graduates holds both private and public benefits for a country. Private benefits are evidenced by a rise in employment prospects and income,

and the concomitant ability to invest and save money. Tied as it is to overall better health and longer life expectancy, higher education also leads to improved productivity (Bloom *et al* 2005). As for public benefits, Bloom and his colleagues catalogue them as follows:

> Higher earnings for well-educated individuals raise tax revenues for governments and ease demands on state finances. They also translate into greater consumption, which benefits producers from all educational backgrounds. In a knowledge economy, higher education can help economies keep up or catch up with more technologically advanced societies. Higher education graduates are likely to be more aware of and better able to use new technologies. They are also more likely to develop new tools and skills themselves. Their knowledge can also improve the skills and understanding of non- graduate co-workers, while the greater confidence and know-how inculcated by advanced schooling may generate entrepreneurship, with positive effects on job creation.
>
> (Bloom *et al* 2005:16)

The trend towards increased enrolment at higher education institutions is also reflected in the South African Department of Higher Education and Training's (DHET) *Green Paper on Post-School Education and Training* released in early 2012, which envisages enrolments at the country's twenty-three universities to increase from 900,000 per year in 2011 to 1.5 million by 2030, and at other tertiary institutions from 359,000 per year to 4 million over the same period. The express motivation behind this policy is that it will enhance both human and economic development (RSA DHET 2012:20).

However, financial support by governments for higher education is seldom adjusted upward to keep up with the increase in student numbers. On the contrary, budget cuts and fiscal restraint appear to be the global trend, as governments are forced to weigh up the benefits of competing priorities. Thus, as many governments have reduced funding, large classes have become more common due to the limited availability of teaching staff and sheer student enrolment numbers. The greater prevalence of large-class teaching and learning environments arguably adversely affects the quality of the educational experience, along with student performance, motivation and engagement, and impacts on students' ability to acquire valuable problem-solving and critical thinking skills.

This is especially problematic in the light of research findings that most students enter higher education environments with learning strategies and approaches constructed around the memorisation of facts and the simple reproduction of knowledge, or so-called 'surface learning' (Exeter, Ameratunga, Ratima, Morton, Dickson, Hsu & Jackson 2010). These students need to be shown how to adopt the problem-solving and critical thinking skills crucial for an innovation economy and a knowledge society (Biggs 1999). Unfortunately, large-class learning environments are typically counterproductive in this regard, as they reinforce didactic teaching styles. The performance of those students who require interaction for motivation is especially likely to suffer when the scope and

intensity of student-teacher interaction decreases, as tends to happen in large-class environments (Mulryan-Kyne 2010; Exeter *et al* 2010). Regardless of their learning style, students also exhibit poor levels of engagement with material, less commitment to courses, and lower motivation levels when presented with large classes (Mulryan-Kyne 2010). All things considered, large classes do not appear to be conducive to establishing the higher order cognitive skills noted earlier.

LARGE CLASSES AND DEVELOPING COUNTRIES

Despite the problems of large-class teaching, it is a reality that many higher education institutions must face as more and more students seek and require degrees in order to secure employment. While this is a problem facing developed and developing countries in equal measure, the issue has higher stakes in developing contexts, for a number of reasons.

Firstly, higher education and access to it are considered as key elements in national development (OECD 2008), which is why increasing student numbers is a key objective in developing countries. However, when students lack motivation or show poor engagement with their subjects and higher order cognitive skills are not fostered, the quality of the learning environment and the educational experience is called into question. As a result, in developing countries, teaching in large-class contexts has direct negative ramifications not only for the quality of the educational experience, but for development *per se* (UNESCO 2005).

Secondly, the general challenges of large-class teaching are compounded in developing countries in that there are less economic resources available to fund higher education institutions. This means that, in proportion to the population seeking higher education experiences, there are fewer institutions available in developing countries for students to attend, which in turn increases pressure on these institutions to increase intake. For example, Canada has a population of just over 30 million and maintains more than eighty universities; by comparison, South Africa, with its population of over 50 million, has only twenty-three university institutions. In addition, developing countries and their relatively poorer populations have less financial resources with which to provide for and support higher education students, adding further to the pressure to adopt large-class formats.

Poor student performance (especially among students from vulnerable groups) associated with large classes (Ehrenberg *et al* 2001; Exeter *et al* 2010; Mulryan-Kyne 2010) also has more detrimental effects in developing countries. If large classes are associated with higher dropout and failure rates, or students only superficially mastering course content, then they have the potential to reverse the very gains that developing countries hope to achieve by expanding enrolment in the first place. Moreover, in an economic environment that advocates the efficient allocation of resources, this situation represents a waste of scarce government funds. It is therefore essential to adopt practice that mitigates these adverse outcomes in large-class contexts.

Given the pragmatic reality of large classes, how can developing countries turn this problem into an opportunity? How can quality education, defined as promoting the acquisition of higher order cognitive skills such as problem solving and critical thinking, be achieved in a context that is not conducive to student engagement, motivation, or performance? This book offers both conceptual and empirical insights into ways of ensuring quality education in large-class teaching and learning contexts. It thus fills a considerable gap in the literature by rethinking the opportunities and strategies to promote quality education available to teachers of large classes in higher education environments. Even more importantly, not only does it fill this gap in a manner that is particularly sensitive to the challenges faced by developing countries; it also adopts an interdisciplinary perspective that makes these insights, opportunities and strategies practical and useful for a range of institutional and disciplinary contexts.

The contributors to this book are motivated by the belief that, in and of themselves, large classes do not necessarily spell disaster for student learning or diminish opportunities for providing quality education. The literature contends that students are able to adapt their learning strategies to ensure successful completion of a course (Biggs 1999). Such student resilience and ability to adapt is encouraging, and highlights the important role that teaching and assessment strategies play in student learning (Exeter *et al* 2010; Meyers & Nulty 2002; Mulryan-Kyne 2010). Curriculum design, instruction techniques and assessment all influence student engagement and learning outcomes (Biggs 1999; Boulton-Lewis 1998; Kember 1998; Marton & Booth 1997; Powell 1982; Rowntree 1987). Meyers and Nulty (2002) contend that in order to maximise the quality of students' educational experience, learning environments should be constructed in ways that ensure that students' adaptive responses to the curriculum become congruent with the aims of the course (Biggs 1996; Boud 1982; Ramsden 1992). By focusing on the structure of the curriculum, the strategies employed for instruction, and the way students are assessed, the problems associated with large-class teaching environments can be addressed and quality education ensured (Biggs 1996; Meyers & Nulty 2002).

This book stems from a two-day symposium held at the Wits (University of the Witwatersrand, Johannesburg, South Africa) School of Education in late 2011 that sought to examine the ramifications of large-class formats for student learning and to present strategies to integrate problem solving, critical thinking and student engagement in these contexts. The symposium attracted a broad range of participants from South Africa and beyond, and was generously supported by the University of the Witwatersrand's Deputy Vice-Chancellor (Academic) Professor Yunus Ballim, as well as the Wits School of Education. The presentations and discussions were driven by a dual desire to understand the unique circumstances of higher education in developing countries and determine whether class size matters in creating a quality educational environment; and if so, to understand how student learning is both affected and effected, and consider what opportunities exist for innovative pedagogical practice.