

Large-sized Classes – What Insights Can We Gain from the Research?

The effect of increasing class size in higher education is not well understood, although there is a body of literature on class size effects in primary and secondary schools that offers evidence that is used to define class sizes across grade levels. In higher education there are no mandates for class sizes and the average class size for introductory undergraduate classes increases linearly with the institutional level of research intensiveness. We often hear of a negative relationship between increased class size and perceived student learning, but is this really the case? Here is what we do know:

- Class sizes are increasing and that “large classes are very prevalent in many universities and are often gateway courses to students’ major fields of study” (Stanley & Porter, 2002). “Failure rates in these courses contribute heavily to overall institutional drop-out rates between the first and second years” (Twigg, 2003).
- Currently there are conflicting research findings on the relationship between class size and student learning. While clear proof of a relationship between quality instruction and student/teacher ratios does not exist, there is supporting evidence of a negative relationship. For example, when looking at class size on students in the United Kingdom, the authors found, “The effect of class size on students’ performance is – as expected – negative; student do worse in big classes” (Bandiera, Larcinese, & Rasul, 2010). Notably they also found no class size effects across a wide range of intermediate size classes and that students at the top of the grade distributions are the most affected by class size.
- One of the key questions remains, “How small is small?” The best current estimate is a class size of 15 is optimal, but we cannot conclude that the relationship between class size and positive outcomes is strictly linear. More research is needed to identify if there is a threshold number below which the positive benefits of class size increase appreciably and if there is a threshold number, above which the liabilities of further increases in class size become negligible.
- Interviews with students reveal their belief that it is the quality of the instructor, not class size that impacts their learning (Litke, 1995). Yet research reveals that students tend to rate a professor’s teaching quality higher when class size is smaller (Kwan, 1999; Ludlow, 2005; McPherson, 2006). More experienced students express stronger preferences for larger classes than do first year students (Feigenbaum & Friend, 1992).
- Research indicates a positive relationship between student engagement and learning (Pascarella & Terenzini, 1991) and that class size affects teachings styles (Westerlund, 2008).
- The research suggests that we need a better understanding of the link between class size and performance that requires our looking at the characteristics of the students and their instructional effort. We also need to look at instructor variables such as instructor availability outside of class and the quality of their instruction. There is a clear need for evidence-based advice and strategies that can be used to improve large-class teaching.

In particular, many concerns are being raised about the large, “en masse” education for first-year students. “The sheer size and anonymity of large classes seem to militate against the very elements that promote students’ involvement and intellectual development, learning, and success. Student inattention or absence from class and mediocre student performance seem to be tolerated as unfortunate realities” (MacGregor, Cooper, Smith & Robinson, 2000). In a manuscript arguing against large-sized classes, Cuseo (2007) uses empirical evidence that suggests these eight outcomes associated with large-sized classes:

1. Increased faculty reliance on the *lecture* method of instruction
2. *Less active student involvement* in the learning process
3. Reduced frequency of instructor *interaction* with and *feedback* to students
4. Reduced *depth of student thinking* inside the classroom
5. Reduced breadth and depth of *course objectives, course assignments, and course-related learning strategies* used by students *outside the classroom*
6. Lower levels of academic *achievement (learning)* and academic *performance (grades)*
7. Reduced overall *course satisfaction* the learning experience
8. *Lower student ratings (evaluations)* of course instruction

Cuseo offers the following two ways in which institutions can “reorganize for learning” with respect to class size:

- Redirect administrative decision-making away from a focus on “average” class size and student-faculty ratio to a focus on the *variation* or range of class sizes available to students each terms and at different stages of the college experience
- Reorganize the *process of instructional delivery* in large-sized classes

Closing thought – While there is research on what constitutes good practice in large-sized classes, it is mostly disseminated through discipline-specific resources. We need more on policies and trends because, “...at this stage, research into the implications of increased class size has focused on the level of teaching and assessment, neglecting to sufficiently examine best practice at the higher echelons of administration, notably departmental, institutional and governmental levels” (Newstead, 2000; Biggs, 1999; Gibbs & Jenkins, 1992).