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The class size paradox

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**GREAT TEACHING TIPS**

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**EDUCATION QUOTES**

- "Teach the ignorant as much as you can, but never is it possible to give them education for all until they are ready for it. When it becomes a necessity to make them learn, their heads are filled with the seeds of knowledge, but the web over the diamond.

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Welcome

Welcome to the final issue of volume 2 and 2015! We have all been working extremely hard to produce our final issue of the year. In this issue, we have some amazing content to share with you all. We have the contributions of academics, educators and professionals from a couple of Australian universities.

Our undergraduate community is well represented in this issue with several articles being published on issues ranging from sustainability to VET policy.

We are very excited to move into our third year of publishing. We plan to bring out our new look design for our volume 3 issues and bring out issues packed with more content then ever!

I would also like to take this chance to congratulate the following contributors on their graduations:

- Ms Rhianna Brickle
  Bachelor of Education (Early Childhood) from the University of Tasmania.
- Ms Hannah Friedrich
  Bachelor of Education (Secondary) from the Queensland University of Technology.
- Ms Laura Lee Leggett
  Bachelor of Education (Primary) from the Queensland University of Technology.

The FACULTY team: Nathan Watts (Director), Dr Patrick Delaney (Quality Assurance Coordinator and Academic Advisor), Orry Gravolin (Social Media and Communications Coordinator) Tristan Williams (Marketing Coordinator), Emma Mathews (Editor), Ruth Alder (Editor).

Volume 2 Issue 3 Contributors

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Laura Leggett, Associate Professor Micheal Dezuanni, Anna White, Emma-Jane Serico-Kilford, Stephanie Maker, Nathan Watts, Dr Ann Stewart, Jessica Tselepy, The Pinnacle Foundation, Brian O’Neill, Hannah Friedrich, Gerard Stevenson, Dr Kay Ayre, Associate Professor Boris Handal, Associate Professor Kevin Watson, Professor Marguerite Maher, Orry Gravolin and Haydn Watts

Thanks to our supporters.
The Class Size Paradox

By Associate Professor Boris Handal, Associate Professor Kevin Watson and Professor Marguerite Maher – The University of Notre Dame Australia.

For a society like Australia with a profound egalitarian drive, there is no greater aspiration than positioning education as the best vehicle to achieve individual and social prosperity. “We are all diminished when any of us are denied proper education,” said Gough Whitlam in 1969. And yet, after more than five decades, Australia is not ranked well in international studies like PISA and TIMSS, and the education gap among socio-economic strata is evident particularly for Indigenous students.

While many private schools advertise small class sizes attracting more financially secure parents, the question remains whether what matters is the actual number of students in a classroom or the quality of the teaching being delivered.

For decades teachers and parents on one side and bureaucrats on the other have argued differently about class size. Most teachers and parents believe class size should be commensurate with teacher ability to respond to the individual learning needs of each student. Hence, common sense would suggest the smaller the class, the better the outcomes. Bureaucrats, in turn, argue that major research studies do not prove that smaller class sizes have a strong impact in improving student academic performance as much as quality teaching.

“We are under instruction from the industrial commission to reduce the workload of teachers so that they can perform at the level that we expect them to,” said Labor education spokesperson Michelle O’Byrne earlier this year in an interview with the Hobart Mercury as part of the political debate on class size that regularly ignites in the media and stimulates public debate.

Does class size reduction improve student academic performance?
Research findings can be evaluated at two levels simultaneously: (a) what the reader actually reads and (b) how the reader integrates what they read with their ‘common sense’. The media, teachers and members of the general public as well as researchers read and interpret research in an attempt to confirm their ‘common sense’ expectations. Historically, the vast majority of early research on class size (1970s to 1990s) used numbers. The main findings were that the greatest increase in learning, as a result of being in a small class, occurred: in the early years of schooling; and when students were from a disadvantaged background. The three main large-scale studies were the Student–Teacher Achievement Ratio (STAR) project; the Student Achievement Guarantee in Education (SAGE) project; and the California Class Size Reduction Program (CSRP) (Watson, Handal, Maher & McGinty, 2015).

Researchers began to strongly voice their opinion that class size reductions should not be expected to improve student academic performance; and that the relationships between class size reductions and student improvement was relatively weak. They re-examined, re-thought and re-interpreted evaluations of previous studies. Studies during the 2000s and more recently have used mixed methods which included interviews and observations that enabled researchers to understand why and how class size reductions influenced student achievement (Handal, Maher & Watson, 2014).

Interestingly, most of the qualitative research occurred after the three aforementioned studies and concluded that class size had an organic effect on the dynamics of the classroom. Rather than focusing on the potential for increased computing skills to enhance student achievement these studies focused on both cognitive and affective gains like student–teacher interaction, student–student interaction, group work, classroom management and engagement (Mitchell & Mitchell, 1999; Stecher & Borhnstedt, 2000). More recently, John Hattie in his 2013 book ‘Visible Learning: A synthesis of over 800 meta-analyses relating to achievement’ reviewed a large number of existing studies to identify educational variables and their ‘effect size’ in enhancing student academic performance. After running a comprehensive review of past educational research projects Hattie concluded that the foremost variables were instruction-based while class size ranked 106th out of 138 variables scrutinised.

Hattie argues that it is not difficult to find evidence on both sides of the discussion about whether a reduction in class size leads to enhanced classroom learning or not. Hattie attempts to identify the reasons for the inconsistent findings about the effect of class size reductions and in so doing positions its influence in terms of other, interrelated, influences.

While smaller class sizes do not always translate into improvement in student achievement, the debate seems to come back to quality teaching. Studies on class size revealed that when teachers were given smaller classes they kept enacting pedagogies suitable for large classes, that is, they did not change the way they taught. In cases where reductions in class size had an effect, the improved academic performance of students was accompanied by professional development initiatives. Dedicated small class size strategies should promote help-seeking behaviours, differentiated teaching approaches, remedial instruction, non-routine learning activities requiring discovery and exploration, project work, field investigations, group work and collaborative learning.

Unlike other OECDs countries, the lack of empirical research on class size in Australia in the last decades is evident. More recently, research at The University of Notre Dame Australia has focused on the impact of class size on student achievement relative to other educational variables. The study interrogated data collected over five years from tests results associated with the Australian National Assessment Plan in Literacy and Numeracy (NAPLAN). Over 100 Sydney primary schools were involved. The findings showed that five factors influenced student achievement. In order of influence these factors were (a) gender, (b) Non-English speaking background, (c) calendar year testing conditions, (d) class size and (e) community and socio-educational advantage. In a related questionnaire study 1,119 teachers from
321 K-12 NSW public schools were unanimous in asserting the value of smaller classes in promoting student learning. However, the interview data, from the same study, showed that the majority teachers who said they changed their teaching strategies when teaching a small class were unable to articulate the small class teaching strategies they used. The exception was that some teachers said they used personalised instruction. In addition, most primary teachers were more likely than their secondary colleagues to show a preference for classes of 21 or more students whereas their secondary counterparts expressed a preference for less than twenty students. Interestingly, primary teachers indicated that small classes were of greater advantage for students from low socio-economic, ethnic, non-English speaking, Indigenous and rural backgrounds because they were able to cater for their specific learning needs. Both groups recommended small classes for low achievers. These results suggest that it is impossible to ascribe an optimal class size across the general student cohort in terms of age and socio-cultural diversity. Class size is certainly a nebulous construct which is difficult to frame through econometric models.

The Notre Dame researchers also interviewed 12 secondary mathematics teachers to understand what could be an optimal class size and to determine the variables that could determine its magnitude. Teachers indicated that a reduction in class size would benefit low achievers, increase classroom student engagement and promote the use of higher-order thinking learning tasks. Other teachers said that quality teaching, irrespective of class size is a better way to enhance student academic performance. For the purpose of the aforementioned studies, the term small class applied to classes with 20 or less students.

The bottom line is that class size in isolation is a small factor in increasing student academic performance. Class size reduction achieves its ‘effect size’ as an enabler of increased student achievement only when the desired pedagogies are implemented effectively. Small classes provide an opportunity for a more student-centred approach to teaching.

Class size reduction, while able to be investigated in its own right, can only be understood in the context of other school reforms that influence academic achievement such as new views about curriculum, emerging pedagogies, the introduction of standards-based testing and teaching quality. One emerging finding about class size research is that it tends to be socio-culturally and socio-economically dependent. It is not just studies about class size that need to be analysed, it is certainly a more complex phenomenon. In general, findings about class size need to be related to other variables and class size reductions alone cannot improve academic performance, hence mixed findings.

The main question remains: Can changing the way we teach increase student achievement without the huge expense of employing more teachers, providing more classrooms and schools as well of the additional management costs? In the meantime, economically selective schools may be attracting enrolments based on an inflated or rather ambiguous premise that reduced class size increases student academic performance.

References


Boris Handal

Boris Handal is an Associate Professor in Education and Higher Degree Research Coordinator at the School of Education of the University of Notre Dame Australia. He has published over eighty papers in academic journals and conference proceedings in the United States, Europe, Australia, Latin America, Africa, Middle East and Southeast Asia. In 2005 he achieved the NSW Minister of Education’s ‘Excellence in the Integration of Information and Communication Technologies’ Award and in 2010 the Macquarie University Vice-Chancellor’s ‘Award for Programs that Enhance Student Learning’. Last year he was a Visiting Professor at the University of Alberta.

Marguerite Maher

Marguerite Maher has been a teacher educator in universities, a teacher in secondary and primary schools, and she has experience in early childhood settings in three countries: Australia, New Zealand and South Africa. After her initial teacher education, her first post-graduate qualification focused on children with specific learning difficulties. Her Master's research was undertaken with Maori and Pasifika children and their families developing culturally appropriate and engaging ways of enhancing the numeracy learning of these children, and her PhD examined inclusive education theory to practice. Margie came to the University of Notre Dame Australia from Charles Darwin University where, in partnership with the Catholic Education Office of the Northern Territory (NT), she led the implementation of in situ teacher education for Indigenous Assistant Teachers in six remote Catholic schools. From 2011 to 2014 she was involved in a project funded by the Australian Office of Learning and Teaching which identified aspects that enhance the transition of Aboriginal and Torres Strait Islander students into higher education. In 2014-2015 she is completing an evaluative study of an initiative known as Khanyisa (Lighting up Learning) in KwaZulu-Natal, South Africa.

Kevin Watson

Kevin Watson is an Associate Professor at The University of Notre Dame Australia. He maintains a teaching fraction with the School of Education while his substantive position is Director of Research, Sydney. Kevin has completed many research projects and is currently finalising a project for the Sydney Archdiocese CEO as well as an OLT grant in partnership with Macquarie University. He is a reviewer for four international and one national journal. He has been Vice-President and President of the NSW Institute for Educational Research (ieR) and spent six years as a Councillor with the Science Teachers’ Association of NSW. Kevin was Head of Program (Secondary) at UWS and is a founding member of the ROSETE Project which implemented a research-based teacher education programme with partners in China and NSW DEC. He was a member of a team working with NSW DET to evaluate the implementation of Positive Behaviour for Learning (PBL/PBIS) in western and south western Sydney. This research was funded by the Australian Research Council (ARC) as a partnership grant.