

EDITORIAL

The scholarship of teaching and learning as integrative practice

Peter David LOOKER¹ and Erle LIM Chuen Hian²

¹ Teaching, Learning & Pedagogy Division, Teaching Excellence Academy, Nanyang Technological University

² Department of Medicine, Yong Loo Lin School of Medicine, National University of Singapore

Address for Correspondence: Dr Peter David Looker, Teaching, Learning & Pedagogy Division, Nanyang Technological University, LT19A-B4-01, 50 Nanyang Avenue, Singapore 639798

Email: pdlooker@ntu.edu.sg

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The scholarship of teaching and learning as integrative practice

In this issue of *AJSoTL*, the two original articles, commentary and book review demonstrate how the scholarship of teaching and learning is an integrative practice, drawing research and teaching into alignment at a number of levels. Hubball et al. refer to SoTL's seminal articulation by Boyer in 1990, but in considering the articles in this issue, we could also usefully recall von Humboldt's notion, in 1810, of the university as a place where both teachers and students are in the service of scholarship. In the university, he suggests, teaching and research are not separate domains. Through scholarship, teachers and students pursue knowledge together. Unlike school education, where teachers instil settled knowledge, the university is a place where everything is subject to the dynamics of scholarly investigation. Von Humboldt's ideas are often cited as the foundation on which modern universities are built, but they pose a challenge to the way modern universities have split teaching and research.

As we see here, the idea of SoTL can be expanded to encompass a scholarly approach to the effectiveness of educational leadership, or it can be applied to involving students in research. In the spirit of Boyer's notion of scholarship as both more inclusive, and less narrow, than disciplinary research, these articles demonstrate integration by applying scholarly principles to the whole field of teaching endeavour and this, in turn, draws on disciplinary research. As others such as D'Andrea and Gosling (2005) have argued, the university should be a learning organisation where even administrative processes can be open to scholarly investigation. As an integrative scholarship, SoTL is not just about opening up new areas for scholarly investigation, because in and of itself, it integrates the domains of teaching, learning and research.

The commentary by Hagen provides a good example of a SoTL project moving towards von Humboldt's notion of students involved in research. It describes a reconfiguration of the curriculum for a second-year large-enrolment course in cell biology. It outlines the challenges of teaching a course with more than 250 students, including the perception that there is only one way, through knowledge transmission, for students to learn the foundational knowledge.

Instead, the author approaches teaching the course with the intention of developing a number of different skills and capabilities in the students other than the memorisation of foundational knowledge. The key to the approach is to involve students in reading and disseminating actual research papers. Critical thinking and analysis, better writing, and an understanding that science is dynamic, not a matter only of settled knowledge, are some of the desired outcomes. Students should be able to comprehend research, read and interpret data, and make further hypotheses. In other words, the curriculum described here is an attempt to foster students' abilities to think like scientists.

The commentary describes three approaches aimed at achieving the outcomes. Importantly, these approaches integrate learning activities and assessment. Aligned assessment is clearly one of the keys to success. The three approaches require a problem-based stance towards acquiring and using knowledge, and also encourage students to think independently. (An important consequence of this is that the assessment tends to discourage plagiarism.)

Two other important aspects of the commentary are worth noting here. First, acceptance on the part of the students to an approach that is largely different from what they have encountered before depends on ensuring they understand research methodology, and secondly, they should be given a clear understanding of what is required in the research-paper based assignments.

Readers will no doubt find a lot to draw on in this paper, because it provides material that others can emulate or adapt, and the description of the student evaluations of the course help enormously in thinking about the way forward.

While Hagen gives us an example of deliberately integrating disciplinary research into teaching in order to improve student outcomes, Hubball et al. direct attention to what they call a scholarship of educational leadership (SoEL). Scholarly approaches are applied to setting up a framework within which educational leadership can both be advanced and evaluated. Drawing on Boyer, the authors argue for a more inclusive view of scholarship, including the idea that knowledge is also acquired through teaching.

The paper by Hubball et al is a cross-institutional article involving two high-ranking research-intensive universities, the National University of Singapore (NUS), and the University of British Columbia (UBC). Significant areas of focus are fostering and maintaining the scholarship of teaching and learning, promotion and tenure processes and collaborations between the two universities.

In terms of SoTL as an integrative form of scholarship, this paper is very clear about the need to bridge the gap between teaching practice and disciplinary research by ensuring that SoTL is not seen or evaluated differently from disciplinary research. The same criteria should be applied to all research. This is part of UBC's P&T guidelines. In the case of NUS, 2015 has seen the introduction of a new educator track where for full professor, there will be a common rank for both teaching and research. Educational scholarship, the paper argues, should align with the institution's research mandate.

The point of this article, however, is to promote SoEL as a means of instituting effective educational leadership practices, subjecting to scrutiny those practices (such as P&T processes) that are not informed by rigorous scholarship, are not well executed, and importantly, do not allow for concepts of development, instead providing static (and summative) snapshots. Four components of an evaluative process for P&T are proposed: context, planning, implementation, and assessment. This framework provides a cross-institutional means of evaluating P&T, especially as it allows for an

analysis of context. A desired outcome is the ability, through scholarly investigation and critique, to produce environments that maximise opportunities for career progress.

This article contributes to a constructive expansion of the possibilities for scholarship that grows naturally from the scholarship of teaching and learning. SoTL is often thought of in terms of what happens in the “classroom” in a particular course, but the logical extension of this is what happens in educational leadership to sustain good classroom teaching.

Considering that many universities mandate class participation, and indeed, score students on their performance during participation, it is interesting that there is a relative dearth of articles examining the practice in a scholarly manner. Ravi Chandran examines the factors influencing classroom practices and learning outcomes at the Business School at NUS, which mandated classroom participation (defined as communication to the whole class, instead of communication within smaller groups or in online forums) in selected core modules, to ensure that students learned to better communicate their ideas. Class participation has been demonstrated to be affected by factors such as interaction norms in the class, peer support and criticism, the student’s personality and confidence level, interpersonal familiarity, interest level that the student has in the subject, its level of difficulty, student preparedness, level of motivation and knowledge, and the presence/absence of dominant personalities. The awarding of marks may encourage student participation, albeit resentfully. Interestingly, the perceived support of the teacher also plays an important part in encouraging student participation, as can the kind of questions he/she asks.

Ravi Chandran administered a questionnaire, comprising 12 questions, 10 close-ended and 2 open-ended, about matters such as the effect of awarding marks. The open-ended questions related to their opinion as to the three most important factors which encouraged and discouraged class participation. Chandran’s study largely confirmed data from previous studies, although new issues arise, such as the fostering of competitiveness, the fact that the marking of student’s participation could paradoxically stifle active and meaningful participation. The role of the teacher in controlling these negative effects was emphasised. Interestingly, students were concerned that their teachers might not provide sufficient opportunities for students to participate in class, a result that prompted teachers to re-examine how they conducted their classes, and incorporate more opportunities for participation. One effect of mandatory class participation seemed to be the perception that students talked for the sake of scoring marks for participating, rather than doing so in a meaningful way. Conversely, some professors, it was felt, demotivated participation by focusing on the marks rather than the spirit of the exercise, which was to encourage communication. In short, it was felt that the professor played an important role in encouraging class participation.

Tan et al, in their review of Dewar and Bennett’s *Doing the Scholarship of Teaching and Learning in Mathematics*, underscore the importance of using SoTL to teach mathematics – particularly to those who are “deeply invested in educating and engag-

ing undergraduate students about the ‘exciting’ world of Mathematics, what Mathematics is, and what Mathematics can do”. The book, they assert, is useful in that it also deals with issues that are challenging to academics undertaking any research process. The authors acknowledge that, in a book review, it is well-nigh impossible to deal with all the issues raised in the book, and choose instead to highlight learning points gleaned from their reading of the classroom experiments detailed in the book from a SoTL perspective, e.g. the importance of designing SoTL research questions after a comprehensive literature review; the utility of multidisciplinary collaboration; the use of both quantitative, and qualitative data, to overcome the small sample sizes in some SoTL research, and the ethical considerations when conducting educational, and in particular SoTL, research.

In one of their classroom experiments, Dewar and Bennett attempted to engage students to think deeply about Statistics and Mathematics by using real world problems. Though they “grappled with methodological issues” when trying “hard to find evidence supporting the efficacy of their interventions”, Tan et al felt that their strategies showed promise. These classroom experiments no doubt also highlight the promise of using real world examples to teach a multitude of subjects.

“Investigating the use of assigned reading questions”, in which students found computational questions requiring them to work through a problem to be more useful than those which merely require regurgitation of textbook materials, is particularly relevant, in view of the increasing popularity of flipped classrooms and MOOCs, and the need to ensure the quality of the learning experience.

The exhortation to “go public” so that “others can build on it” is not only one of the tenets of the book in question, but is also in keeping with the spirit of *AJSoTL*, i.e. to offer academics the chance to conduct interesting educational SoTL research, and allow dissemination of this research to the wider community.

The four articles in this issue demonstrate the range and capaciousness of SoTL, a field of research that has the capacity to unify the diverse endeavours of university faculty across the teaching-research nexus. Importantly, SoTL has implications for disciplinary research itself, and it also stretches to research in leadership and collaboration across countries and institutions for a better culture of student learning.

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