

Bringing teaching to life: Exploring innovative approaches to Operations Management education

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Abstract

Purpose – The aim of this review and of the papers in our special issue is to critically examine different approaches to teaching Operations Management in order to provoke and stimulate educators within the discipline.

Design/methodology/approach – The papers within our special issue include empirical assessments of a problem-based learning ERP simulation; a computer-based learning tool for MRP; a simulation of assembly operations; an operations strategy innovation game; an extension of the production dice game; an experiential teaching method in different class settings; and problem-based assessment methods in OM. A variety of data are used to support these empirical studies, including survey, interview, and observational data.

Findings – The papers within the special issue support the argument that Operations Management is well-suited to more applied methods of teaching focusing on the application of subject knowledge to real-life situations through a variety of techniques.

Practical implications – We hope that our review and the papers within this special issue act to stimulate educators to re-evaluate their approaches to teaching OM and encourage them to consider adopting experiential teaching methods, business simulations, role-plays, group exercises, live cases, and virtual learning environments, instead of, or in addition to, the more conventional lectures that typically dominate many OM modules around the world.

Originality/value of the paper – A special issue on teaching OM appears timely given the significant changes to both the university landscape and to the nature of the discipline that we have witnessed over the last quarter of a century.

Key words – Operations management, teaching, higher education, learning

Paper type – General review

Operations Management (OM) poses distinctive challenges, but also exceptional potential to educate, provoke and inspire students. Whilst its convenience in delivering information to large groups of students has ensured the continued dominance of the traditional lecture format in many universities, its efficacy is increasingly questioned. This is a particular concern for such an applied subject as OM, where the focus moves beyond simply teaching an established body of knowledge, towards the application of this knowledge to real-life situations.

Furthermore, the immediacy of operations-related decision-making and the dominance of empirically derived concepts make OM seemingly well-suited to more applied methods of teaching. Moreover there is sufficient variety of teaching methods used by academics within the discipline to investigate which approaches have delivered significant benefits for the understanding and practice of OM. These include: conventional lectures, group exercises, experiential teaching methods, business simulations, role-plays, live cases, and virtual learning environments, used independently or in various combinations on a range of undergraduate, taught MSc, MBA, and executive programmes. This is what prompted our original call for papers for this special edition. Our purpose was to champion innovative approaches to teaching Operations Management (and extending to Supply Management, Service Management, and Project Management) so that we might bring insights and new ideas to a wider audience. In doing so, we aimed to stimulate educators around the world to re-evaluate their own approach to teaching and to encourage their colleagues to do likewise.

It would be difficult to dispute the need for such a re-evaluation. The last quarter of a century has seen huge shifts in the practice and theory of Operations Management as traditionally defined – world class concepts, Japanese and Chinese competition, internet and corporate social responsibility to name a few. Yet the very meaning and scope of OM has also started to undergo changes. The idea of ‘operations as an activity’ as separate from ‘operations as a function’ (Slack *et al.*, 2012) has broadened the relevance of what and how OM academics teach (or maybe *should* teach) to include areas of business once seen as outside of the discipline’s reach. Led (as so often) by business practice, managers are increasingly looking to OM to have something relevant to say regarding their Sales Operations, Finance Operations, IT Operations, and so on. In parallel, the university context in many countries has also experienced significant change. For example, a shift from a mono-method to a blended learning approach that incorporates several methods of teaching may be critical to successfully disseminating OM knowledge in the increasingly diverse student groups now found in many OM classes. Furthermore, the continuing shift towards the ‘the student as customer’ perspective may make higher levels of contact and student engagement a pragmatic necessity. Despite the extent of these developments, Operations Management education, arguably, has been slow to respond. In the mid 1990’s, Davis and Botkin noted that despite some upgrading of course materials and class offerings, the 1960’s ‘product’ remained recognisable in many business courses. Recent research from Ulrich (2005) supports this view, stating that there is “little evidence that curricula and pedagogy have changed over

time” (p269). More concerning, leading scholar Henry Mintzberg has derided the state of business education, declaring that new MBA graduates should have ‘Not fit to manage’ stamped on their foreheads.

Some see the less than agile response to changes in operations practice and student requirements as being a function of the competing pressures of teaching and research on OM academics. At its most extreme, this view sees an increasingly undervalued role for teaching in the university context, with Deans, Presidents and Vice-Chancellors prioritising research (or at least publications) over teaching. Clearly, there are obvious tensions on any, but particularly junior, faculty between contributing to the subject by building a solid research record and contributing to the wider appreciation of the subject through their teaching skills. Yet seeing research and teaching as a pure trade-off is surely simplistic. After all, we moved on from the simple trade-off theory of OM some years ago. Maybe we should be focusing on how research and teaching can complement each other rather than seeing them as direct competitors for our (limited) time. However, in the difficult task of balancing research and teaching efforts, some of us do have some sympathy with the view that it is vital not to under value the importance of teaching.

It is therefore to the enormous credit of the International Journal of Operations and Production Management, her editors, and the European Operations Management Association (EurOMA) that support the journal, that we have been allowed to dedicate an entire special issue to the subject of teaching Operations Management, to try and redress the balance to some extent. We highlight the many innovative and exciting ideas that faculty across the world are supporting in Operations Management education. This issue serves as explanation and inspiration to faculty involved in the teaching of Operations Management. Students are after all the next generation of Operations and Supply managers and directors in the real world – engaging them with the subject by enlivening their learning experience can be of significant value to staff and students alike (as well as fostering the interaction and engagement that can lead to long term research partnerships with these students). Likewise, some of those we teach, if we do it well, will be sufficiently inspired as to become academics in the field and thus ensure its continued growth as a business discipline.

In the call for papers for this special issue we stated:

“The purpose of the special issue is to champion innovative approaches to teaching operations management, and to bring insights and new ideas to a wider audience. In doing so, we aim to stimulate operations educators around the world to re-evaluate their own approaches and draw lessons from the special issue.”

The special issue call met with an extremely positive response, with a high volume of papers submitted by authors from universities around the world including those in Australia, Belgium, Brazil, Canada, China, Hong Kong, Finland, France, India, Italy, Netherlands, New Zealand, Spain, Turkey, United Kingdom, and United States of America. Papers were double blind reviewed and typically went through two rounds of revisions. The final seven selected for publication represent a diverse group of topics, address learning and assessment outcomes, and evidence the real benefit of investing time and effort in improving learning and teaching in operations/supply management education.

In *Authentic OM problem solving in an ERP context*, Pierre-Majorique Leger, Patrick Charland, Robert Pellerin, Gilbert Babin, Jacques Robert, and Paul Cronan evaluate a new approach to teaching a staple of Operations Management – Enterprise Resource Planning (ERP). The authors explore the concept of problem-based learning, evidencing its superiority in practice through the application of a Java-based ERP simulation that mirrors the complexity and messy problems of ERP systems in the real world – something that is all too often abstracted in traditional lectures exploring ERP.

In *Interactive learning in operations management higher education*, Francisco Arenas-Marquez, Jose Machuca, and Carmen Medina-López propose a new approach to dealing with another stalwart of operations management business courses – MRP systems. They describe the development of a computer based learning tool and evidence how such a computer assisted learning tool can generate better student outcomes in terms of objective tests of knowledge and subjective appraisals of the learning process.

In *Simulation of assembly operations using interchangeable parts for OM education*, Luciano Sanots, Cláudia Gohr, and Milton Vieira Junior present their applied activity that simulates the type of assembly operations common in industrial settings, focusing specifically on teaching the topics of work measurement and assembly line balancing. They explore how the

philosophy of active learning can be applied through an action research approach and demonstrate the applicability of the method during in-class exercises.

From these hard-system aspects of operations management, in *The innovation game: lessons in strategy and operations management*, Baris Yalabik, Sinéad Roden, and Mickey Howard investigate a new experiential approach to the relatively more abstract concept of innovation. In the paper, they present the innovation game, which aims to provide participants with an experience of the strategic and operational choices involved in new product and service development. Their paper demonstrates the value of such a tool in teaching students about the numerous challenges to successful innovation.

In *Extending the production dice game*, Marc Lambrecht, Stefan Creemers, Robert Boute and Leus Roel, revisit the classic operations management game focused on throughput and variability, and extend it in a number of ways to improve its pedagogical value. In doing so, they once again highlight how relatively simple experiential learning approaches and simulation games can be powerful tools to engage students in the practical problems that face operations managers on a day-to-day basis and that are often difficult to translate in more traditional lecture-style forms of delivery.

In *Examining the effectiveness of experiential teaching methods in small and large OM modules*, Niall Piercy, Alistair Brandon-Jones, Emma Brandon-Jones, and Colin Campbell² describe and evaluate how experiential learning approaches are not just the reserve of small scale courses (where many such approaches were developed), but are equally applicable to large scale teaching environments. The article provides compelling evidence supporting the use of experiential teaching for large pre-experience as well as smaller post-experience groups of OM students.

Finally, in *An evaluation of problem-based assessment in teaching operations management*, David Bamford, Katri Karljalainen, and Ernest Jenavs offer a different approach to problem-based learning, focusing on evaluation and assessment methodologies. They investigate the benefits of a multiple-submission coursework based around problem-based learning versus the traditional end-of-semester examination so common in business school education. They

² To avoid a conflict of interest, the review process and editorial decisions for this paper were overseen and managed by the regular IJOPM editors and not the special issue editors.

demonstrate that students perceive such approaches as providing better feedback, stimulation and skill development, as well as (potentially as a result) better overall grades.

The collection of papers in our special issue covers a range of topics from the most traditional and core elements of operations management through to newer and more abstract concepts. Each paper demonstrates how breaking free from the lecture theatre can benefit the operations management student, and that while each approach comes with its cost, the faculty involved have benefited from superior student engagement, learning, and feedback. At the very least, this special issue should provide academics with ideas that challenge the way they currently deliver subject knowledge to students. The faculty represented in this special issue, drawn from all over the world, have taken the time and effort to develop exciting and innovative approaches to teaching and learning. We are honoured to share these with the wider OM community and hope they will serve as a focal point for our colleagues engaged in OM education.

Producing this special issue would not have been possible without the excellent efforts of our reviewers. As Guest Editors, we would like the following reviewers for their contribution to this special issue:

Eamonn Ambrose	Jannis Angelis
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Emma Brandon-Jones	Nicola Burgess
Nigel Caldwell	Tugba Cayirli
Daniel Chicksand	Paul Cousins
Simon Croom	Carolien de Blok
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Vincent Hargaden	Christine Harland
Matthias Holweg	Mickey Howard
Robert Johnston	Amitkumar Kakkad
Katri Karjalainen	Maneesh Kumar
Benn Lawson	Michael Lewis
Shuyu Lin	Jose Machuca
Claire Moxham	Andy Neely
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Zoe Radnor	Mandi Relph
Nick Rich	Jens Roehrich
Michael Shulver	Rhian Silvestro
Martin Spring	Brian Squire
Ruth Taylor	Erik van Raaij
Nicholas Wake	Helen Walker

Paul Walley

We congratulate the authors for the high-quality papers they have contributed to this special issue.

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References

Bligh, D.A. (1998), *What's the use of lectures? 5th edition*. Harmondsworth, Penguin.

Davis, S. and Botkin, J. (1994), *The monster under the bed: How business is mastering the opportunity of knowledge for profit*. New York, Simon and Schuster.

Frontczak, N. and Kelly, C. (2000), The editors corner: special issue on experiential learning in marketing education. *Journal of Marketing Education*, 22, April, pp. 3-4.

Gibbs, G. (1992), *Improving the quality of student learning*. Technical and Educational Services Ltd, Bristol.

Mintzberg, H. (2004), *Managers Not MBAs: A Hard Look at the Practice of Managing and Management Development*. Berrett-Koehler, America.

Read, C. And Kleiner, B. (1996), Which Training Methods Are Effective? *Management Development Review*, Vol. 9, Issue. 2, pp. 24-29.

Skinner, W. (1969), Manufacturing – missing link in corporate strategy. *Harvard Business Review*, May-June, pp 136-145.

Slack, N., Brandon-Jones, A., Johnston, R., Betts, A. (2012), *Operations and Process Management, 3rd edition* Pearson, Harlow.

Ulrich, T. (2005), The relationship of business major to pedagogical strategies. *Journal of Education for Business*, Vol. 80, Issue. 5, pp. 269-274.

Weinstein, C. (1999), *Action Learning, 2nd edition*. Aldershot: Gower Publishing Limited.