

---

Title	Editorial: Challenging learning conventions
Author(s)	Elizabeth Koh and Hyo-Jeong So
Source	<i>Learning: Research and Practice</i> , 4(2), 127-130
Published by	Taylor & Francis (Routledge)

---

Copyright © 2018 Taylor & Francis

This is an Accepted Manuscript of an article published by Taylor & Francis in Educational Research on 16/10/2018, available online:

<http://www.tandfonline.com/10.1080/23735082.2018.1512220>

Notice: Changes introduced as a result of publishing processes such as copy-editing and formatting may not be reflected in this document. For a definitive version of this work, please refer to the published source.

Citation: Koh, E., & So, H.-J. (2018). Editorial: Challenging learning conventions. *Learning: Research and Practice*, 4(2), 127-130. <http://dx.doi.org/10.1080/23735082.2018.1512220>

# **Challenging Learning Conventions**

Elizabeth Koh and Hyo-Jeong So

*National Institute of Education, Nanyang Technological University, Singapore and Ewha Womans University,  
South Korea*

## Challenging Learning Conventions

LRP is in its 4th year of publication, and we must say, it's been quite a ride. We have launched a series of special issues that highlight emerging and important directions for learning. Additionally, we are slowly seeing manuscripts that foreground learning mechanisms that defy traditional notions of thinking and are also rigorous in their theorisations and methodology. This issue brings together three such papers.

Easterday, Lewis, and Gerber begin this issue with a hallmark redefinition of the notion of design research. The article highlights five uncertainties underlying current design research conceptualisations and then provides a new lens for design research. It emphasises that educational design research is a meta-methodology with sub-design processes that make it more complex to understand. Using seven iterative and nested phases focusing on the purpose of each phase, a logic for design research is defined. The authors argue that these phases should be seen not as time-bound stages, but as purpose-driven processes; they provide relevant examples for illustration (e.g. Immigrant Voice project). By making clear the goals and processes of educational design research, the paper provides a better understanding to practise design research and to teach about design research to new researchers. Ultimately, design research "integrates design and research to simultaneously create new solutions and build theory" (p. 22), and the contribution of this article in comprehensively articulating the reasoning of the process provides greater knowledge and understanding to strengthen design research methodology henceforth.

Zooming into a specific and pertinent educational issue of assessment, Leber, Renkl, Nuckles, and Waschle empirically examine the age-old but often overlooked issue of coherence between teaching and assessment practices. The article provides empirical evidence of the fit between teaching practice with test methods and its impact on students' motivation, learning strategies, and learning outcomes. The aligned condition was when teaching for understanding was assessed with an assignment that allowed students to display their understanding of the concepts, while the misaligned condition was with the same teaching practice but a fact-oriented test (a "downward misalignment"). Tested with 81 university students, the quasi-experiment study revealed that students in the alignment condition applied more elaboration strategies, as well as having better understanding, higher perceived competence, and less perceived pressure. However, procedural knowledge was similar in both conditions. This research examines an assumption that we often do not question and provide evidence to confirm the importance of having coherence in the teaching goal and the assessment design. The paper contributes to the classroom practices and the design of assessment to ensure that all need to be consistent in their goals and purposes. Though this study is in the higher education context, it remains a question if this finding would be similar in K-12 settings. And this is another common convention for future research.

The next article by Svihla, Wester, and Linn focuses on STEM learning in a high school context. It tests the theory of distributed practice, which is commonly assumed to be a key teaching and learning strategy for better learning outcomes. Comparing distributed (one activity per week) versus clustered (activities on consecutive days) practices in a five-week inquiry science curriculum unit, the quasi-experiment revealed contrary findings. The clustered condition scored better in the post-test and delayed post-test compared with the distributed condition. The study also examined the studying strategy of self-directed revisiting

and found that revising of steps (self-directed revisiting) had different patterns for the two conditions, but was not significantly different. Thus, it is not possible to determine whether this strategy was better for any of the conditions or helped in different ways. This study's findings are more complex than the initial research design, and the contradictory results and non-significant results warrant further research that is situated in authentic classrooms rather than in experimental settings. Also, it begs the question of whether distributed practices are beneficial to all types of learning, or only for rote factual learning.

To round up this issue, the commentary by Tan brings us to a timely issue about the purpose and methods of STEM education. Despite the growing popularity, what should constitute STEM and how STEM practices in school should look like remain unclear. The author aptly points out the danger of taking uncritical perspectives in the current STEM movement, questioning what we gain or lose from the interdisciplinary mix in STEM. He argues that context dependent and interdisciplinary approaches in the current STEM movement may run the risk of losing the sights that each disciplinary base may provide. He concludes with a call for more research efforts that look into the importance of educating the ethical dimension in STEM, and of advocating pluralism in epistemic and pedagogical approaches in STEM.

The articles in this issue at first glance seem like chalk and cheese, with different foci, reference fields, conditions, and types of participants. However, at the heart of these articles are informed and/or rigorous efforts that challenge the conventions of learning, that attempt to figure out the best solutions and understandings for the educational circumstances of our time. Through explicating a meta-theory, testing a theorised convention or challenging popular trends, the articles question often assumed or accepted practices and convey that reality is more complex than existing theorisations. There is a need to continually question the assumptions of existing theories, learning goals, and the learning context.

On reflection, when are such learning conventions typically assumed without critical empirical evidence? We sum up two possible reasons: (1) too obvious, and (2) against our general beliefs and understanding. These are, then, our learning blind spots – or the “streetlight effect” (as pointedly illustrated in a previous editorial of this journal: Tan, 2016, p. 86). These places are possible areas that we must be vigilant to in our research.

It is also germane that these are examined in authentic contexts. This issue's commentary by Tan questions the worldwide movement towards STEM education and the necessity to look at authentic historical lessons for the path ahead. The three regular articles included underline real contexts, research in authentic learning situations: Easterday et al. through the practice of design research, and the other two articles describing actual field experiments in higher education and K-12 contexts, respectively. It could be that some of these earlier theorisations occurred in lab settings rather than classroom settings. In authentic learning settings, many aspects could affect the design and results of the study. Therefore, design research with its iterative cycles and goal of improvement is an important approach to adopt. Ironically, the findings in the articles lead to confirm Ann Brown's claim of the “blooming, buzzing confusion” (Brown, 1992, p. 141) of classrooms.

Still, we applaud all the authors for their heroic efforts in tackling assumed and overlooked conventions. They have put a stake in the field of learning, to examine complex and complicated authentic settings. Most of all, we thank them for their willingness to trust and publish in a young journal.

This year we also welcome our first international Associate Editor, Hyo-Jeong So. Although we have a diverse and established international advisory board, we wanted to seek deeper connections and representation from various regions, and are thus broadening our once Singapore-based editorial board.

Hyo-Jeong is Associate Professor at Ewha Womans University in South Korea, and is widely published in mobile learning, computer-supported collaborative learning, and informal learning. She is particularly interested in learning from collaborative knowledge building perspectives. Besides having like-minded topic interests as this journal, she is – pertinently – a courageous academic who has challenged the odds in search of research excellence. Born in South Korea, she completed her PhD at Indiana University, USA, and then crossed into another culture to work at the National Institute of Education, Singapore. Subsequently she moved back to South Korea, where she has led numerous research projects including a working paper series with UNESCO. Hyo-Jeong brings a wealth of experience yet a curiosity for the less known and explored aspects of learning. Her contributions have already made an impact on the explications in this editorial! All at LRP heartily welcome her on board this journey.

In this issue, we are glad to highlight papers that in their own way defy traditional conventions of learning. We look forward to receiving more contributions that challenge the existing norm. Together and with boldness, we will continue to explore and challenge the “hardest science of all” (Berliner, 2002, p. 18).

## References

Berliner, D. C. (2002). Comment: Educational research: The hardest science of all. *Educational Researcher*, 31(8), 18–20.

Brown, A. L. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings. *The Journal of the Learning Sciences*, 2(2), 141–178.

Tan, M. (2016). On the gap between research and practice: Or, the unique challenges of starting a new journal. *Learning: Research and Practice*, 2(2), 85–87.