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Refocusing SoTL – Myopia, Context Lenses and Ecological Systems Theory

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A program director of a one-year-old Singapore surgical residency programme reads a publication about a new model of feedback. The paper describes how a US medical school successfully trialled and implemented this new feedback model. Excited, she then tries to implement this new model in her residency programme. Unfortunately, this fails to change faculty and resident behaviour, with disgruntled faculty and residents, and poor take-up by the various surgical departments within her programme. Disappointed, she stops using the new feedback model after a year.

What happened? Why would an educational intervention about feedback, published as part of Scholarship of Teaching and Learning (SoTL) (Steinert, 2017), and successfully implemented in a US medical school, fail to take root in a Singapore surgical residency programme? Might failure to consider context have contributed? A review of the publication showed that while descriptions of the feedback model and the educational outcomes were rich, descriptions of the medical school environment and the broader educational context of the US were sparse.

Might a richer description of context in the publication have helped readers understand the social and educational milieu from which the novel feedback model developed? And with that understanding of context, might a subsequent analysis of contextual differences between the publication and the residency programme's dissimilar contexts have helped avoid this education setback? Fundamentally, did the lack of contextual descriptions lead to a myopic view of the educational intervention?

Let's first examine SoTL, which is defined as "the description and dissemination of effective and novel teaching methods and strategies, in a research presentation or publication" (Steinert, 2017). While standards for SoTL in health professions education (HPE) have been proposed (Glassick, 2000), including the need to describe goals, preparation, methods and results, there is scant mention of the need to describe the *context* within which the novel methods or strategies were operationalised or implemented. So while SoTL remains effective for disseminating novel teaching methods, the variable extent to which context is described (Bates & Ellaway, 2016) may result in challenges in implementing such methods in a different environment; key contextual enablers for successful implementation may have been inadequately described within the HPE SoTL literature. In contrast, the general education literature has long been aware of the importance of context in SoTL (Felten, 2013). There is therefore a blind spot in the HPE SoTL literature.

We next examine context. While we highlight rich descriptions of context for the value it brings to SoTL, we pause to reflect: how do we define context? Context can be difficult to define. A scoping review (Bates & Ellaway, 2016) concluded that one perspective was context as a "surrounding", much like the layers of an onion, with a particular context playing a role as a

mechanism influencing education outcomes. Employing these twin perspectives of "context as an environment surrounding an education activity", and "context as a mechanism" (Bates & Ellaway, 2016) influencing said activity, we can then view context as *surrounding and influencing* the educational method, its implementation and its outcomes.

Given the many elements within the context that may influence outcomes, how do we then systematically identify and dissect these disparate elements? The analogy of an onion with surrounding layers (Bates & Ellaway, 2016) led us to consider Bronfenbrenner's Ecological Systems theory (EST) (Bronfenbrenner, 1986). In EST, multiple systems (micro-, meso-, exo-, macro- and chrono-), much like layers of an onion, influence an individual's learning. EST can be used to identify, dissect, and categorise contextual influences, and determine if they enable or inhibit educational activities.

In our scenario, the original SoTL work did not fully describe the context. Let us now imagine that the situation was clarified by us writing to the authors to learn more about their context. We are then rewarded with a rich, three-page description of their context. Using EST to dissect the differences between the US context of the intervention, versus the Singapore context of the residency programme, we now realise there were differences at multiple EST system levels, for example:

a) **Microsystem**: medical students vs residents as learners and feedback recipients, university faculty vs clinician faculty as feedback providers

b) **Mesosystem**: uniprofessional vs multiprofessional peers and colleagues, undergraduate vs postgraduate curricula

c) **Exosystem**: university vs clinical training environment, academic workload vs clinical workload

d) **Macrosystem**: cultures of medical school vs residency, cultures of university vs medical profession, societal cultures of the US vs Singapore

e) **Chronosystem**: historical perceptions of feedback and utility of feedback in the US vs Singapore

With these different EST system levels in mind, one can identify enablers and inhibitors to successful implementation of the published feedback model in Singapore:

a) **Microsystem**: residents and/or clinician faculty may be busy or distracted by concurrent clinical duties, thus less willing or able to deliver actionable feedback using the model, vs university lecturers who had dedicated time for feedback sessions

b) **Mesosystem**: while feedback was institutionalised in the US medical school as a longitudinal aspect of the curriculum since 10 years ago, allowing easier integration of a new model into a mature curricular element, adding a new feedback model into a one-year-old programme's curriculum and implementing it added more stress to a new programme still in flux

c) **Exosystem**: the US medical school had several resources that the local programme did not. The American researchers had many dedicated teaching rooms for feedback provision to the medical students. In contrast, the surgical residents had to compete with other residents and users for fewer rooms in the local hospital that were also used for multiple clinical, administrative and research purposes. The university also had a mature e-portfolio system where faculty and students could review goals, milestones and progress to facilitate feedback provision, while the new residency programme did not.

d) **Macrosystem**: feedback was viewed positively by university faculty and students as a key learning activity, with the school taking pride in providing actionable feedback as part of its culture and values. The school's Dean also publicly affirmed support for the new feedback model. In contrast, the new residency faculty were still unused to providing structured feedback, or inviting reflection as part of feedback; some even viewed feedback as a chore rather than as a vehicle for learning and improvement. The nascent feedback culture of the residency faculty had not fully taken root yet, unlike in the US school.

e) **Chronosystem:** Historical perceptions of feedback differed in the US vs Singapore, with feedback considered valuable for learning and improvement in the US. In Singapore however, feedback was viewed by some senior surgical faculty members as being useful only when mistakes were made by residents, whereupon forceful negative feedback was given by faculty to the resident in the name of patient safety, rather than for learning. These views from the local senior faculty were informed by their prior experiences as trainees in earlier training systems, leading to their rejection of the new feedback model as being "soft" and compromising patient safety.

With a rich description of context, and using EST as a tool, one can now see how the different system layers surround and envelope the faculty, residents and their feedback interaction. One can also see how contextual differences in these system layers (in the US vs Singapore) influenced the success or failure in implementation of the new feedback model. If rich contextual information was provided in the SoTL literature at the start then this information, considered

with EST, might have helped the residency programme director avoid the implementation failure.

Successful understanding and application of SoTL in HPE thus relies not only on the six goals espoused by Glassick (Glassick, 2000), but also requires adequate descriptions of context. Readers can then understand contextual differences, use EST to compare and contrast it to their context, identify differences at various EST system layers and determine the potential influence of these differences.

Conversely, the general education literature emphasises that SoTL should be "grounded in context" (Felten, 2013). Felten explicitly states "... all SoTL is rooted in particular classroom, disciplinary, institutional, and cultural contexts" and that "any measure of good practice must account for both the scholarly and the local context where that work is being done" (Felten, 2013). The primacy of context is stated, clearly and unambiguously.

In summary, while we have made progress in SoTL in HPE, we have not adequately considered context in our SoTL guidance (Glassick, 2000) compared to our general education colleagues (Felten, 2013). This underemphasis on context may result in sparse descriptions of context in the HPE SoTL literature, leading HPE readers to be myopic and failing to see the myriad contextual influences affecting understanding and translation of the described SoTL methods to the reader's context. If we had richer descriptions of context in the SoTL literature, however, we can then use the 'context lenses' to clearly view the surrounding layers that influence education outcomes (Bates & Ellaway, 2016). Finally, with visual clarity, we can then dissect and analyse these layers via mapping them to systems levels using EST (Bronfenbrenner, 1986), so that effective translation and implementation of the described SoTL methods can take place. It is time to correct our myopia by collectively advocating for the rich descriptions of context in our HPE SoTL literature.

Notes on Contributors

Dr Kevin Tan reviewed the literature and developed the manuscript. Dr Foo Yang Yann reviewed the literature and gave critical feedback to the writing of the manuscript. Dr Nigel Choon Kiat Tan reviewed the literature and gave critical feedback to the writing of the manuscript. All authors have read and approved the final manuscript.

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Declaration of Interest

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