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Learning innovations from research to practice: Dilemmas in the field

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Abstract:

Educational research has been at the forefront of educational transformation through examining how learning occurs and enabling ways of learning notably through designing and implementing learning innovations. However, learning innovations are complex. There are multiple embedded contexts involving classrooms, schools, communities, homes and the wider education landscape. This article is a reflection from two researcher-innovators who have partnered with schools and teachers in their innovation and change journeys in Singapore. We have encountered several tensions amongst teachers and raise three of those dilemmas relating to stakeholder perspectives, sustainability and the customisation of the innovation. Learning innovations in the field, while creating various dilemmas for the key teacher stakeholder, translates research to practice and enables teachers to learn and grow their professionalism. An effortful resolution is required.

Educational research in the field

There has been a perennial call in education for its transformation, to be relevant, to plug gaps and to improve practices. Educational research has been at the forefront of this transformation through examining how learning occurs, enabling ways of learning through designing and implementing learning innovations, structures and policies. In this article, we focus on learning innovations, a key mechanism of educational change, and broadly seen as learning designs that are enacted in the field of education, which are typically classrooms. As such, these innovations are implemented and facilitated by the key stakeholder - the teacher. Teachers have a large role to play in translating learning research to practice. This process of enacting research is also a means to develop the professional capabilities of teachers, to help teachers learn new practices and progress in their craft. However, innovations are complex - this is even more so in education. There are multiple embedded contexts involving classrooms, schools, communities, homes and the wider education landscape. There are countless moving parts in the field, and one can often underestimate what it takes to enact an innovation.

This article is a reflection from two researcher-innovators who have partnered with schools and teachers in their innovation and change journeys. The innovation journey involved working and co-designing with teachers and students, scoping and addressing their needs through specific learning interventions. One author's means of designing and enacting innovations was through on-site professional development while the other author focused more on design-based research. Though our modus operandi was slightly different, the tensions we experienced and saw from the teachers' perspectives as we worked with them were very much the same. Both of us combined have worked with at least fifteen schools

and over eighty teachers in Singapore in the last six years and have encountered several tensions amongst teachers. We raise and deliberate on three of those dilemmas.

Oranges and apples: Similar yet different

A fruit can be an orange to one and an apple to another. Both are round fruits, but they taste and feel very different. This analogy reflects the confusion of what learning innovations are to teachers - amongst teachers and between researchers and teachers. In implementing research innovations, there are many possible miscommunications and varied expectations. Our experiences have shown us that different stakeholders have different understandings of learning innovations, what they can and should be. We have observed that school leaders and teachers often seem to focus on the purpose of the innovation but have very different interpretations of what it is and participate in the innovation for very different reasons. For instance, a school leader can envision the learning innovation for developing teachers and developing their professionalism. However, the teachers' feedback to us that they see the innovation as a way of addressing a problem in their classroom and want to focus more on their own classroom and students' learning.

In another example, principals saw 'Action Research' as an approach for teachers to collectively inquire about classroom issues, design innovations and engage in evidence-informed practices. Principals invested in this endeavour by providing workshops and engaging researchers to support teachers' learning journey. However, some teachers did not see the value of engaging in action research as means to inquire and improve their practices. Instead, teachers saw it as additional workload rather than as part of their practice. They engaged in the inquiry practice in superficial ways without reflecting critically about their practice. This led to limited impact of action research as an approach for teachers to reflect, improve and implement evidence-informed practices.

We illustrate another story of varied expectations. One author received buy-in from the school leader and teacher to implement a new innovation with the expectation that this is going to be useful for the teacher and curriculum in the school. We worked with the teacher and co-designed the curriculum iteratively over two years including developing a web-based system and lesson packages. However, new direction and tools from both the leader and teacher demanded that this redesigned curriculum could not continue to be used. The different expectations between stakeholders to a certain extent rendered the innovation useless. What redeemed this project was the experience, the learning and development through the process for both the researcher and teacher. Also, the system and lesson packages could be utilised by other interested schools.

Efficiency and sustainability: Recognising the costs

In Singapore, the education system has gone through several stages of educational improvement. From survival-driven, to efficiency-driven, to ability-driven, and now towards values-driven (Ng, 2017). In implementing learning innovations, the industrial mind-set of "efficiency" tends to dominate. Schools seem to focus on accountability and the extent of commitment required. There is tendency to focus on short-term returns; leading to outcome mind-sets within specific time frames. Schools seem less likely to adopt compromises or calculated risks. This is problematic especially when encountering innovation dips. Consequently, opportunities for teachers to engage in deeper sense making are constrained. Schools need to acknowledge that it is difficult to have an efficient innovation as well as a sustained one. What many stakeholders do not realize, or take for granted, is that there is a cost to learning innovations. Hidden to many are the costs in terms of teacher time and readiness, structural and curriculum organizing and scheduling, investment of teacher

professional development, and sacrificing and prioritizing learning epistemologies and loads. All these need to be intentionally and strategically managed in order for innovations to have chances for continuity and sustainability.

For instance, in one learning innovation implementation, all the teachers and students agreed that reflection is a valuable skill important for future-ready learners. However, the process of helping students to learn to reflect was challenging. Despite negotiations amongst teachers and researchers, the intervention was unable to find sufficient time in the school curriculum to do just that. Though teachers and students might want the goal of reflection in that specific curriculum, there was not enough capacity and will to provide the time required. Other learning needs were prioritized. An efficiency mind-set made it difficult for the learning innovation to take greater root in the school, to enable it to be sustained.

Investment in teacher professional development complements the schools' innovation journey. Often times, schools' view of professional development is short term. Schools want to quickly level up teachers' capacity to enact the innovation, an efficiency mind-set. Consequently, the capacities developed relate more to the technical implementation aspects of the innovation. However, there is much more value for teachers to go through sustained, iterative sense-making. For schools with such journeys, teachers worked with researchers and their professional communities to co-design innovations, tackle issues and reflect on the needs for different classrooms. This cyclic process of situated professional development (Putnam & Borko, 2000) to adapt the innovation for multiple classrooms is imperative and enables sustainment. Teachers are able to develop rich insights of implementing innovations at the classroom level and collectively at the school level. Teacher learning involves the micro level of how to differentiate the innovation for student profiles and at the macro level how the innovation can be adapted to meet the school's strategic needs and teachers' readiness for change.

Professional development may go beyond teachers to include school leaders. Our experiences showed that discussions with school leaders were important. School leaders play key roles in acknowledging the challenges teachers faced and the accommodations for resources and support structures to alleviate teachers' struggles (Lee & Hung, 2016). Researchers' constant communication and updating of teachers' innovation journey could be a form of professional development for school leaders. These discussions could inform school leaders to think differently as they negotiate with teachers and create contextual enablers to facilitate innovation continuity and sustainability. School leaders could also take this opportunity to communicate to teachers the long term objectives and plans for innovations. Researchers can play key roles in weaving professional development opportunities at the teacher and school leader levels. Professional development at these two levels are key because different stakeholders have different spheres of influence in creating the socio-cultural conditions for implementing and then sustaining innovations.

Off-the-shelf and customised: The community of proof

There is an increasing trend or request that learning innovations take the form of off-the-shelf solutions, that the teacher can 'take and go'. Some have used the term, 'teacher-proof' (Ogborn, 2002), for these interventions. We have encountered this very term in our interaction with several stakeholders during the course of designing the learning innovation. While the idea is to enable an intervention that 'works' and is effective in many contexts, ruling out the individual differences and eccentricities of the teacher, this 'proofing' process is forgoing the possible adaptivities and reducing the growing professionalism of the teacher. Are we idiot-proofing teaching when we overly scaffold learning innovations? How can we develop the teachers' internal capacity and ownership of innovations?

One method is to adopt a community approach and leverage the distributed expertise of different stakeholders in customising the innovations for the school's context (Edwards, 2011; Vangrieken, Meredith, Packer, & Kyndt, 2017). The iterative approach of designing, enacting, and refining innovations helps teachers develop embodied understandings of the strengths and limitations of the innovation. This leads to ownership because teachers are not passive receivers of innovations. With support from the community of teachers and experts, teachers are able to design the innovation and see it work in authentic contexts. These experiences enable contextualised insights so teachers can continue to champion and lead other teachers in adapting and sustaining the innovation for their contexts.

Another dimension that involves the issue of off-the-shelf versus customised innovation is the extent schools want innovations to be embedded in practice. Our experiences guiding schools suggest that off-the-shelf innovations can at most augment and value add existing practices. For innovations to be seamlessly integrated as everyday practice and become school-based, customisation and leveraging internal expertise is key. The struggles and successes that schools and teachers face are enriching experiences. There is need to align innovations with policy mandates and schools' mission, vision, and strategic thrust to encourage the continued motivation of teachers to own these innovations. A small group of trailblazing teachers who have customised innovations is useful to showcase possibilities. Celebration of proof cases and small successes are meaningful to highlight the good work of teachers and encourage them to drive change. Moreover, this community could include partnerships and expertise beyond the school such as consultants and parents; this could add to the diversity of ideas and expand fields of knowledge for the innovation team to tap on.

An effortful resolution: Decisions and trade-offs

Learning innovations are complex. In the socio-cultural context of education, multiple stakeholders are involved in the innovation. Each stakeholder takes a different perspective of the innovation and has their own sphere of influence which may constrain innovation implementation and sustainability. This limited view may cause a failure to understand the factors relating to the success of innovations which are complex, multi-faceted and costly. Stakeholders may unintentionally create inhibitors that short-change their innovation journeys.

Therefore, efforts need to be made to constantly communicate and negotiate with stakeholders such as school leaders, amongst teachers, and researchers. These investments allow them to reach an informed and clear understanding of the scope and feasibility of the innovation given available resources. We recommend that policies, school's vision, existing issues and teachers' interests help in encouraging schools to support the need for these learning innovations.

Professional development and a community for the innovation are needed to drive and sustain innovations. A professional development community for the learning innovation(s) is needed to create the socio-cultural conditions for teachers with a community of diverse stakeholders within and beyond schools. Also, this community building relies on trusting relationships where community participants are given spaces to reflect as well as discuss and work out the details of the innovation e.g., through workshops, meetings, online and offline. Dialogues enable the sharing of classroom enactments, draws out synergistic insights, and possibilities of adapting and customising the innovation for different needs.

Moreover, such continued community conversations ought to be set in an empathetic environment; empathy to appreciate that different teachers and stakeholders come with

different level of readiness, skills, and student profiles. Over time, the conversations provide a platform for teachers to establish a common identity of what and how the innovation can be designed for their specific needs. This common identity can be leverage so teachers can champion innovations and involve new teachers in the innovation to develop continuity and sustainability.

Innovation journeys require commitment. Innovation dips are expected but these can be managed if stakeholders take an incremental approach where resources, recognition, and structures are set aside to embrace this iterative approach of designing, implementing and refining innovations. Not every innovation can have a productive outcome but the success is in the process - the efforts, attempts and lessons learnt with multiple stakeholders. Regardless of outcome, embarking on innovations, big or small, enables learning - various forms of learning. Learning innovations in the field, while creating various tensions for the key teacher stakeholder, translates research to practice and enables teachers to learn and grow their professionalism, developing a mind-set and disposition for inquiring about their classrooms and using evidences to inform practices.

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