Lured to Linger - *Engaged* Researcher/Facilitators' Reflections

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As researchers, we always tend to have a vision in our minds - an idea of how something *could* be or *should* be ever present. But a visionary idea can only gain legs within a collaborative setting and be put to the test within a concrete context. As an educational research team, a key component of the STEPWISE vision is to share our pedagogical framework, teaching & learning “philosophies”, resources and experiences with teachers/educators. Broadly, these aim to encourage and enable learners to take educated and research-informed actions to try to overcome harms - like the climate crisis - associated with fields of science and technology. Then, together with them, we hope to co-plan some implementation of STEPWISE pedagogy within their classrooms, observe, and learn from such an implementation. One may recognize this as an ‘action research’ type of process, which it is. And a key role within this process is that of a “researcher/facilitator (R/F)”, especially an *engaged* one. *Engaged* denoting that the R/F is able to be an *active participant while in the classroom* with opportunities to interact with teachers and students, as opposed to having a strictly observational role. Our team has been fortunate to have been given multiple such opportunities and thus have reflected and learned from them.

Figure 1: Action Research with *Engaged* Researcher/Facilitators (R/F)

As an *engaged* R/F, one is granted a chance to shift the common classroom ‘dyad’ into a ‘triad’ (from teacher & students to include R/F, teacher & students). Visually, one can imagine the R/F as joining an existing network with an intention of bringing the STEPWISE approach into the mix (see Figure 1). This newly formed dynamic network of relationships has potential to create many beneficial learning experiences for all the actants involved and to provide insights about future such processes.

Bridging Theory & Practice

At the outset, R/Fs share with teachers the STEPWISE “vision” and together they negotiate and plan lessons to be implemented. Throughout this process, the ‘researcher’ lens provides R/Fs with theoretical bases and reasoning behind attitudes, skills and knowledge that seem valuable to be taught (for example, teaching a networked view of harms/issues through actor-network theory). Teachers are able to hear about these theoretical perspectives, provide valuable feedback, suggestions, and alterations to ideas shared by R/Fs and ultimately make the final choices about what they wish to implement in their class(es). Understanding reasoning behind teacher decisions is a rich source of learning for the R/F. Then, while being in the class, R/Fs become more privy to ‘facilitator’ lenses that really provide insights about how “concepts/skills” could be taught, emphasized or what could be stressed (for example, how much time or support students may need to build their network maps). Hence, the R/F is able to form bridges between theory & practice and identify areas worth future exploration, such as:

- *Needs for direct teaching before student-directed & open-ended components.* Despite general support for direct teaching of hard to discover concepts, RiNA projects appear to serve well as vehicles for inquiry-based learning from many teacher perspectives. Finding the balance for critical direct teaching leading to inquiry is key.
- *Generation of primary research data by students.* Negotiating valuable and empowering primary research by

students with time, sample size and resource/access constraints is not an easy task. As well, finding the time to teach students how to ask the right types of questions, analyze their data and draw valid conclusions.

- *Action! Proposing it vs. undertaking it and effective forms.* How far do we take the action piece? There are certainly great learning opportunities from undertaking an action, but some valid safety concerns could exist and time constraints as well. And what is a measure of an effective action?

“Living” a Pedagogical Framework

Field testing a planned STEPWISE implementation firsthand lends itself towards a number of benefits for R/Fs, students and teachers alike. For engaged R/Fs, witnessing and participating in the framework implementation gives them a glimpse of what teachers are tasked with on a daily basis and allows them to better pinpoint potential areas of the framework that may need to be addressed or teaching & learning resources that may need to be developed. They also get opportunities to interact with students and content in class in real time, rather than relying just on pre- or post-class student reflections/interviews where students may not openly share struggles. Engaging in discussions with students allows R/Fs to take note of concepts that may be crucial to teach as a result of noticing gaps in knowledge. In addition, R/Fs are able to “test out” resources that have been developed by the research team and see their potential in action. (For example, the creator of one type of STEPWISE resource, called a Multi-Actant Documentary (M.A.D.)

(<http://tinyurl.com/y97254t3>) using the platform Prezi to showcase issues and concerns from multiple stakeholder perspectives surrounding a common commodity found it very informative to see it being used in class. Greater clarity was provided as to how students were interpreting the information contained in the Prezi and to what degree it was serving the intended overall purpose.

Students can benefit from having engaged R/Fs in their class because they are able to experience and learn together with a greater variety of educators and see that researcher's value and care about their education. Upon being asked to share her thoughts about having a R/F(s) present in her Grade 12 Chemistry classroom, a student said the following: "I really liked that you guys came in. Never happened before. It's awesome to see that people care about what we are doing, how to carry it onto other generations. I thoroughly enjoyed it."

Teachers are able to feel better supported while trying out a potentially new framework and can turn to the R/F to aid in discussions and explanations. And, maybe even more importantly, teachers are able to

model a growth mindset to their students by serving as a model of continuous learning and taking risks in trying new things within the action research cycle. In this way, they can potentially set an example to students that it is worthwhile to take on experiences that push one out of their comfort zones in order to learn and gain new attitudes, knowledge and skills.

Throughout this whole process, the R/Fs are informing the research team about progress and emerging themes and debriefing with the teacher/educator. The engaged R/Fs are able to come away from an action research cycle and shed light upon required compromises, inevitable dilemmas/tensions, and future spaces for co-learning/mutual growth - all very valuable lessons to be learnt. It's a role not to be taken lightly or to be taken for granted. As engaged R/Fs, it's a place that affords one to experience "the best of both worlds" - the more-theoretical wisdoms of a research institution and the more-practical wisdoms stemming from within the school system with hopes of gaining insights from both sides and merging them towards beneficial outcomes. Thus, it's a role that lures one to linger in.