# Research-Practice Partnerships Supporting Adoption of Active Learning

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### Abstract

Challenging the "business as usual" approach to instructional design and professional development is a transactional model of practice change – Research-Practice Partnership (RPP). We present a RPP project that supports the integration of evidence-based instruction – i.e., Active Learning – into the pedagogical design and practices of post-secondary instructors. Specifically, we detail the development of an online platform that allows stakeholders – researchers, teachers and instructional designers- to communicate across boundaries and engage in the joint work of designing solutions that are adapted to varied content and context.

### **SALTISE** online Intervention

Our intervention is an online platform that consists of co-designed instructional resources and frameworks that are part of an AL

### Context

**The Team:** SALTISE research group (learning scientist) & practitioners



**Figure 1**: Colleges and universities across the island of Montreal, Quebec, Canada.

Taxonomy & RPP Methods





support program - growing out of a networked professional learning community initiative, SALTISE (https://www.saltise.ca/). To make sense of these resources/data, collected from over 30 college and university instructors, we categorized them into an ecology that generates a principled taxonomy of studentcentred active learning instruction – approaches, strategies, activities, and scenarios (see Figure 2).

Our platform, in addition to presenting this ecology, provides a framework to explore the workflows that make up the AL Activities. The framework works to reveal the relationships between the instructional components that include strategies (with scripts) and tasks that do not have a specified script. They also detail how these components are linked and orchestrated into an Activity.





Figure 2: Researcher (R) and Practitioner (P) interplay in Co-design and drawing in Community for Implementation. Strategies are at the heart of the ecology because they describe the "mechanisms" for the engagement – cognitive, socio-cultural (joint work) or psycho-social (motivational). Interestingly, elements of their scripts are also the focus of research.

 LEVEL
 Grade 12-U0

 DISCIPLINE
 Physics

 COURSE
 Mechanics

 ACTIVITY CONTENT
 Friction, Newton's Second Law, Newton's Third Law

 FECHNOLOGICAL REQUIREMENTS
 Whiteboards or interactive whiteboards.

 GEST USE
 Practice, Review

:5

This activity exposes students to variations of a typical problem in a shorter amount of time than it would take to cover both problems. Students are forced to analyze the work of other students in order to continue, and to contrast superficial details between the two problems. When the problems are side by side, students can easily see the difference between the two and how it affects the question.

#### CHALLENGE

Choosing problems at the right level is difficult, and choosing incorrectly can cause problem in pacing – students should advance at a similar pace. You need to choose problems that are hard enough that no group finishes it right away, but also not so hard that no groups finish The information is contextualized within a practitioner's Activity that provides practical advice about its implement (Figure 5a). The research team analyzes the Activity into its component parts – i.e., the Pedagogical Components tabs that elaborate the Strategies involved. Fig. 5b is an example of the strategy's embedded script. The Activity's ecology is represented as an annotated workflow that describes when and how the learning unfolds and who is responsible for which actions; each Strategies involved is identified by the





**Figure 4.** The website platform and the Resources pages that consist of four types: Strategies, Activities, Articles & Books, Useful links. Our framework is focused on Strategies and Activities. An example of an Activity for Distributed Problem Solving is shown to the right.





## **Deployment of Framework**



Figure 6. Photos and artifacts produced during practitioner workshops

#### SALTISE activities

t the strategie

Activities (All) Two-Stage Exam **Reflective Writing** PHYSICS - Reflective Writing on Torque PHYSICS - Engineering Physics IF-AT PHYSICS - Reflective Writing on Waves ENV SCI - Geography Video Test CHEM - Do you know your stere SOCIAL SCIENCES - Holding Your Sea Gallery Walk Concept Mapping ENGINEERING - Poster Presentation PHYSICS - Kinematics Concept Map ARTS - Time Ripple SOCIAL SCIENCES - Museum Tour **BIOLOGY** - Cycles of Matter SOCIAL SCIENCES - Who am I?





# **Figure 7.** Discussions between researchers and research assistants about the artifacts produced during practitioner workshops





