

# Professional Collaborative Inquiry: Creating Responsive Mathematical Experiences for Elementary Students

NCTM Annual Meeting and Exposition 2016, San Francisco, California

Thursday, April 14<sup>th</sup>, 11:00-12:00, Moscone 3005

Janice Novakowski

## **Reggio-Inspired Mathematics Inquiry Project (RIM)**

A group of K-2 teachers in our district had been embracing Reggio-inspired practices in their classrooms and wondered how the teaching and learning of mathematics might be enhanced through those practices. These practices focus on inquiry-based approaches, emergent and responsive teaching, collaboration and a pedagogy of listening. Teachers from several schools came together to co-construct mathematical provocations with inspiring materials which then led to kit development and idea sharing. Other districts in the area became interested and the project has grown to include K-5 teachers from 9 school districts.

## **Place-Based Mathematics Project (PBM)**

As part of addressing their school goal around increasing student engagement in mathematics, the K-7 teachers at Byng Elementary were curious how to embed aspects of our “new” curriculum such as the First Peoples Principles of Learning. We worked together to create opportunities for students to connect mathematics and their community and uncover the mathematical story of place. This project has since inspired similar projects at other schools in our district.

Drawing upon the success of these two professional collaborative inquiry projects in our district, the professional learning structures that were used that contributed to emerging practices becoming enduring practices for the teachers were documented and analyzed by the groups of teachers involved.

## **Beginning with Curiosity**

Both projects began with teacher’s questions – what they were wondering about. These projects were not suggested, imposed or directed by administrators or district staff.

## **Sharing Sessions**

In both projects there were opportunities for teachers to share with each other about what their successes were but also what they were still wondering about, with an opportunity for feedback and group problem-solving and brainstorming.

## **Google Doc**

When the RIM project grew beyond our district, we began a Google doc as a way to pose questions, share ideas, document and source different materials.

## **Blog Posts**

Teachers contributed photographs and comments to blog posts on both of the projects. Once the RIM project grew beyond our district, a blog just for that project was created as a way to archive, share and announce new events.

## **Twitter**

Teachers shared what they were trying in the classrooms through Twitter, using project-specific hashtags.

## **Co-Construction of Provocations and Tasks**

At group sessions, lunch meetings and via email, teachers co-constructed provocations, tasks and learning experiences for their students. In many cases, this took on an adapted lesson study format where one

teacher tried something and then came to the group for suggestions and feedback and others tried the task in their context and the cycle continued.

### **Inspiring Materials**

Particularly for the RIM project, sometimes what inspired teachers to move forward was a new resource or material.

### **Collaboratively Written Articles and Reports**

In both projects, the granting agencies required journal articles or summative reports to be submitted which gave the teachers involved an opportunity to collaborate and synthesize their thinking on the projects and to set goals as they continue to be engaged in these professional inquiries.

### **Deepening Mathematical Content Knowledge**

In both projects, teachers reflected on how these approaches to teaching required a deeper understanding of the mathematics involved, often because students would uncover mathematics emergently and teachers wanted to be able to respond and provoke their thinking along. Support materials and professional learning opportunities were created in response to this need.

### **Opportunities to Share at Professional Events**

As word got out through Twitter and blogging, we began to be invited to different professional events to share what we were doing. This brought validation to the teachers in the projects and an opportunity for them to reflect upon and make their professional learning visible.

### **Publications**

As yet another way to collaborate and make our professional learning visible, we co-created a teaching resource and a set of postcards for the RIM project and a series of photobooks and photo panels for the PBM project.

### **Resources:**



#### **Reggio-Inspired Mathematics Blog**

[http://janicenovkam.typepad.com/reggioinspired\\_mathematic/](http://janicenovkam.typepad.com/reggioinspired_mathematic/)

#### **Richmond School District Math and Science Blog**

<http://blogs.sd38.bc.ca/sd38mathandscience/>

(use "place-based" in search tool to find blog posts about place-based mathematics)



#### **NCTM Featured Speaker Page**

<http://meetings.nctm.org/2016-annual-meeting/professional-collaborative-inquiry-creating-responsive-mathematical-experiences-for-elementary-students/>

includes links to blogs and specific blog posts, published articles on these projects and some photo panels created for both projects

**Janice Novakowski**

Richmond School District, Richmond, BC, Canada

[jnovakowski@sd38.bc.ca](mailto:jnovakowski@sd38.bc.ca)

twitter: @jnovakowski38

blog: <http://blogs.sd38.bc.ca/sd38mathandscience/>