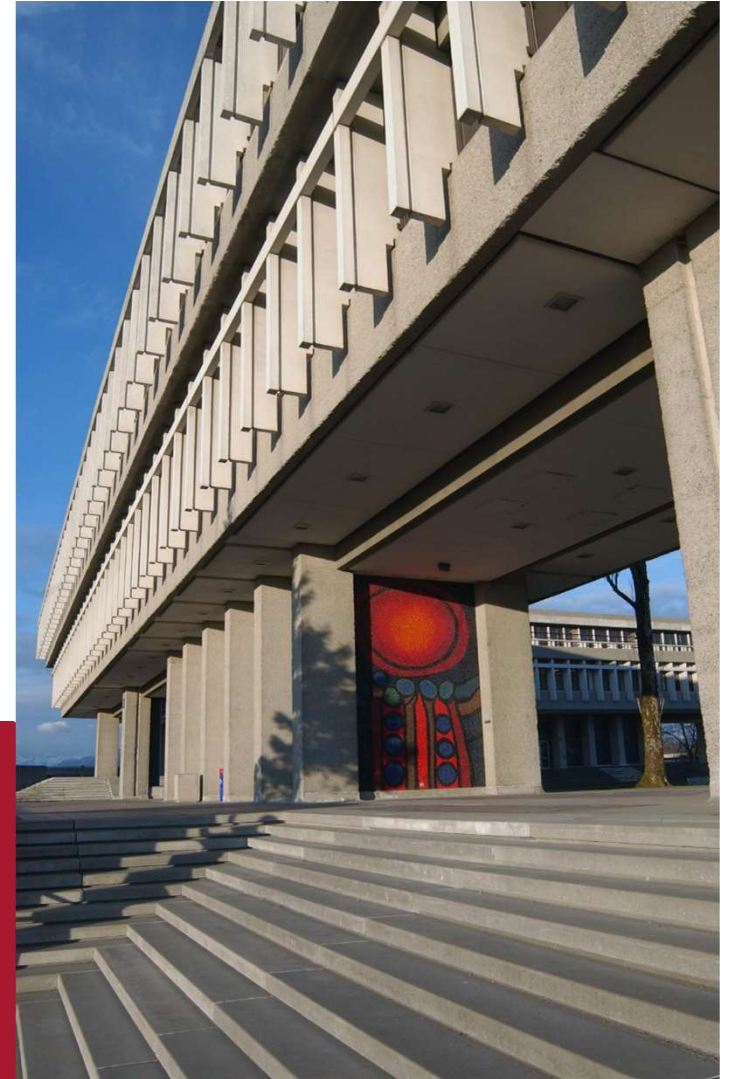


SFU

SIMON FRASER UNIVERSITY  
ENGAGING THE WORLD

# Creating Tension Between Action and Intent

Annette Rouleau – MAVI 22 - 2016



# Creating Tension Between Action and Intent

Annette Rouleau

Simon Fraser University

## Motivation for the study:

“Math facts are a very small part of mathematics but unfortunately students who don’t memorize math facts well often come to believe that they can never be successful with math and turn away from the subject... for about one third of students the onset of timed testing is the beginning of math anxiety.” (Boaler, 2015)

## Theoretical Background:

### Folkways

Established teaching practices which have come to be commonly accepted, and little conscious thought is put into their continued use and implementation (Buchmann, 1987).

Green - evidentiary and unevidentiary beliefs

Lortie - apprenticeship of observation

Pimm - unthought knows

Tall - met before

## Theoretical Background:

### Tension

- A byproduct of teaching, tensions are described as the inner turmoil experienced by educators
- Important to note that tensions can be useful for educators in shaping identity and practice (Lampert, 1985)
- Tension often propels teachers towards professional development and provides the impetus to improve practice (Rouleau & Liljedahl, 2015)

## Theoretical Background:

### Useful tensions

- Tension may need to be deliberately introduced for a change in practice to occur (Liljedahl, 2014).
- Berlak and Berlak (1981) suggest that because a person is capable of being made aware of tensions, they are capable of altering their practice.

## Theoretical Background:

### Tension between Action and Intent

- between working towards a particular ideal and jeopardising that ideal by the approach chosen to attain it (Berry, 2007)

## Research Question:

Does purposefully introducing a tension alter preservice teachers conceptions of timed drills?

What is the transition process experienced by the preservice teachers as a result of the intervention?



## Method:

### Participants

- 69 pre-service teachers enrolled in two sections of a fourth year elementary mathematics methods course

### Data

- 60 journal entries
- pre-intervention survey
- coded and analyzed using modified analytic induction

Results:

## 1. No tension between Action and Intent

Pre-intervention:

- 57 of the preservice teachers ( $n = 69$ ) indicated that they would likely be using timed drills in their future classrooms
- 36 ( $n = 69$ ) had used them during their practicums

Results:

### 1. No tension between Action and Intent

17 ( $n = 60$ ) mentioned the enjoyment they experienced as young students participating in timed drills:

*Julianne: I have grown up doing them (multiplication drills) and I don't see them as an issue.*

26 ( $n = 60$ ) wrote about their negative experiences with timed drills as young students:

*Cate: I have memories of having to spew out math facts as fast as possible. I hated it but I think it's a good way to learn math facts.*

Results:

## 2. Creating a tension between Action and Intent

Post-intervention:

- 47 of the preservice teachers ( $n = 60$ ) wrote about the negative affect they felt when asked to participate in a timed drill

*Jennifer: The minute you told us to stand up and that we will be doing multiplication questions; I went into a panic. My heart was racing, my stomach was clenching and I felt as if my brain was freezing.*

Results:

## **2. Creating a tension between Action and Intent**

*Meryl: It's definitely eye opening, having that memory from almost 20 years ago, and then the feeling of panic that I had when I thought that it was going to happen all over again in a university class.*

*Sandra: After you revealed that we actually weren't going to do this activity, and we debriefed it, I realized just how unhealthy it was for me to think that this was a normal way of teaching.*

Results:

### 3. Consequence of the tension on Action and Intent

Post-intervention:

- 51 of the preservice teachers ( $n = 60$ ) stated that they would no longer be using timed drills in their future classrooms

*Helen: When debriefing, I found it relieving and surprising to know how many other people felt the same way I did. Standing in a room full of adults who are becoming teachers, looking around at how much anxiety was caused by this one activity, I can only imagine in a room full of young students how they would feel.*

Results:

### **3. Consequence of the tension on Action and Intent**

*Reese: As a teacher of mathematics, I will never force my students to do timed drills. After experiencing anxiety when you suggested we do this and seeing the anxiety it provoked in my peers, I was able to understand the anxiety that this causes in our students when we do the same to them.*

## Research Implications:

1. Interventions designed to introduce tension can be useful in unseating folkways of mathematics practice.
  - Disrupting the balance between action and intent may leave a void. The *initial action* (timed drills) is no longer satisfactory for reaching their goals. The *intent* to have students learn their basic facts remains but they will be searching for a *new action* to implement that will help them achieve that aim.
2. It would be interesting to follow-up on the ongoing effects of this tension.