Learning to teach: Teaching to learn

Janette Bobis

Background to the research

**Practical**
- Centrality of field experience in teacher education (eg. Grootenboer, 2005/6)
- Theory/practice gap
- Preoccupied with procedural & management issues
- Teaching the way they were taught.

**Political**
- Politically motivated agenda focused on competency/quality of teachers (eg. Top of the Class)
- Need to provide evidence-base to redress unsubstantiated criticisms
Context of this study

**Long-term goal of practitioner research:**
- To assist the translation of theory-based knowledge to realities of the classroom.

**Characteristics of the mathematics education course & rationale for their use:**

- Alternating Situated Learning Contexts
- Co-teaching
- Embedded Assessment

Why ‘theorise’?

**Alternating Learning Contexts**

Some types of knowledge are best constructed in one context rather than another….

the more authentic the context ….

….The more effective the interplay between theory and practice.
Co-teaching


...involves colleagues working together at all phases of the teaching/learning process...

Peers, Lecturer and classroom teacher

---

Formative Assessment

- ... can enhance learning when it focuses on what is needed for improvement. Wiliam (2005)

  “On the fly”  [Shavelson (2006)]

- Formally planned formative assessment integrated into learning experiences — feedback & remediation is immediate.
Embedded assessment in practice

• 40 min lessons & debriefing
• Tutor observes teaching
• Feedback on planning
• Running records of feedback
• Adjust subsequent planning & teaching

Aims of Study

1. To what extent does the practice-based component provide an effective mechanism for the translation of theory to practice?
2. Explore prospective teachers’ perceptions of their own learning to teach to gain insight into what works best & why.

Ultimate Goal
Better quality teacher graduates
The Student Teachers

• 86 preservice primary teachers
• 4 year B.Ed
• 2nd mathematics methods course
• 2 field experiences prior
• Focus on measurement (Volume/Capacity)
• Working with Year 2-6 (ages 7-12)

NOT part of normal ‘practicum’

Collecting the data

Field notes and lesson plans
• Insight into changes in pedagogy as a result of formative feedback.

Reflective journals and interviews
• Insight into use of theoretical information to inform, reflect on & analyse their practice.
• Perceptions of their strengths/weaknesses
• Interviews helped confirm/validate data from other sources.
Major Findings

Questioning

“in our eagerness to ask the students questions we were consistently asking directed questions focused on producing the correct answer.”

HOT questions planned at end of lessons and hidden among many lower-order questions

HOT questions used to initiate lessons, investigations & problem solving

Findings

Explanations (content & pedagogical content knowledge links)

Increased use of ‘scripting’ explanations and complex instructions.

- Scripting or ‘rehearsing’ seemed to raise prospective teachers’ confidence levels to teach mathematical concepts;
- Perceived to help behaviour management & lesson flow;
- Provided powerful memories of successful teaching.
Nature & focus of tasks

'fun' & 'busy' activities;
Demonstrations
'Safe' (did not address difficult concepts)

'fun' with 'directionality'
Exploratory
'Risk-taking' (Addressed misconceptions)
Focused on conceptual understanding

"...We clearly know the purpose of each activity in the lessons. Without this, the activities looked pointless."

Interplay of Theory & Practice

You could see where the kids were on the framework and this helped us figure out what to teach next.

We structured a sequence of learning activities that reflected the stages of the measurement framework

Teachers should have knowledge of “...current theories relevant to the learning of mathematics...” that will “enable students to develop new mathematical understandings...” (AAMT Standards, 2002)
Perceptions of learning to teach

Time and behaviour management


• Co-teaching enabled most to resolve or suggest strategies for the future.

“We concluded that it is better to spend a little extra time to ensure that students …. understand the concepts of one activity, than abide by a time frame at the expense of having little or no understanding...”

Implications for Teacher Education

• Opportunities to reflect on theory and practice interaction enhanced by alternating contexts;

• Practice-based component provides a ‘secure’ environment for rehearsing;

• Co-teaching encourages ‘risk-taking’, resolve issues collaboratively;

• Embedded assessment allows immediate remediation. Focuses attention on issues of quality teaching (e.g. for understanding)
Implications for practice

- A better understanding of the process of learning to teach overall.
- Recognition of influential/powerful elements in teacher education course and why.

An important implication of this research is the need to provide an evidence-base to redress unsubstantiated criticisms of teachers and of teacher education programs.

Empowered to teach

“This was my most successful practical experience to date …

…I feel really empowered to have such a positive feeling about the children’s learning and the activities I designed…”