

Promoting reasoning skills via subject focus literacy approaches

Paul Webb



- Doing science
- Nature of science
- Language and thought
- Scientific literacy



Senses of scientific literacy

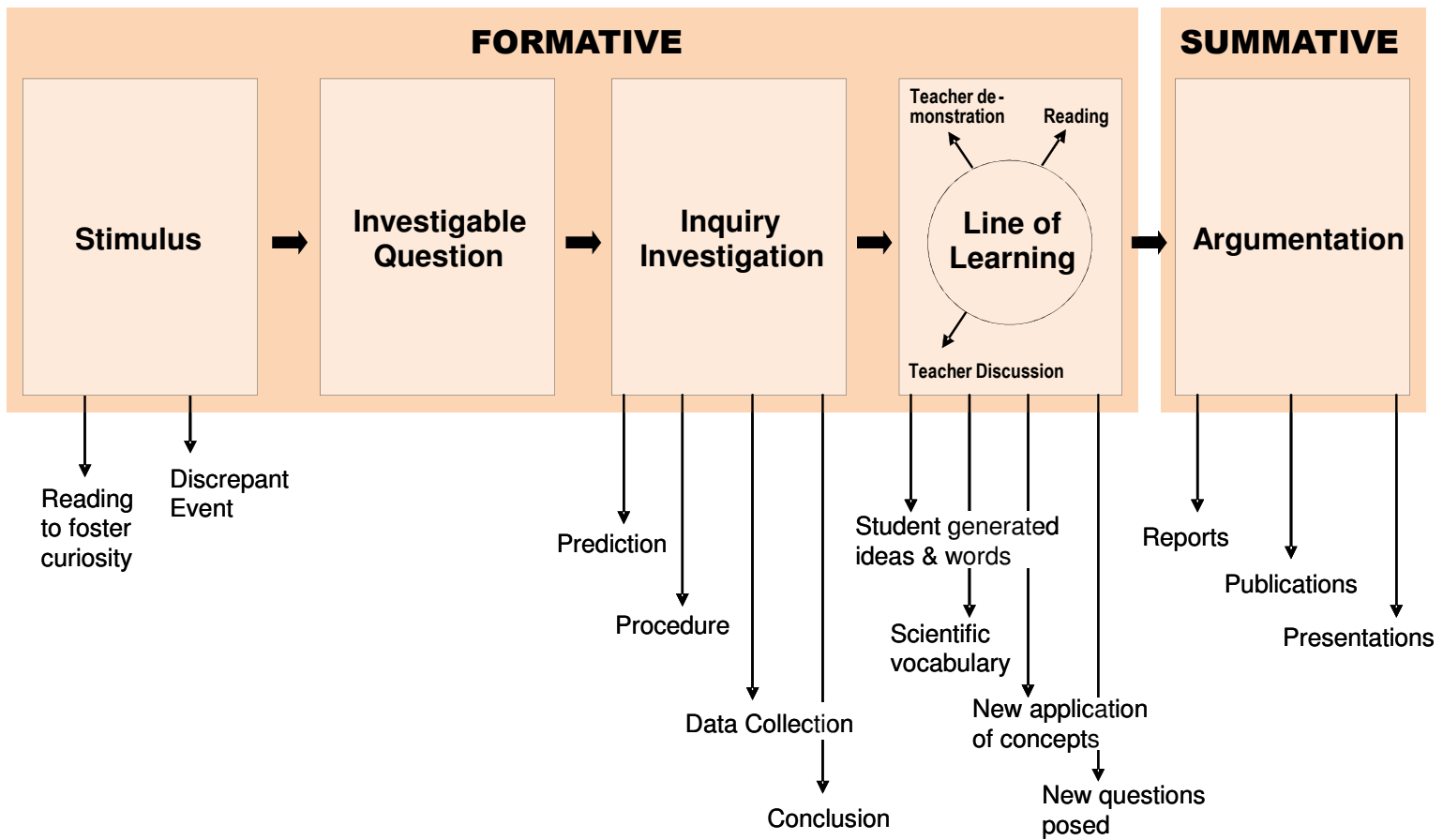
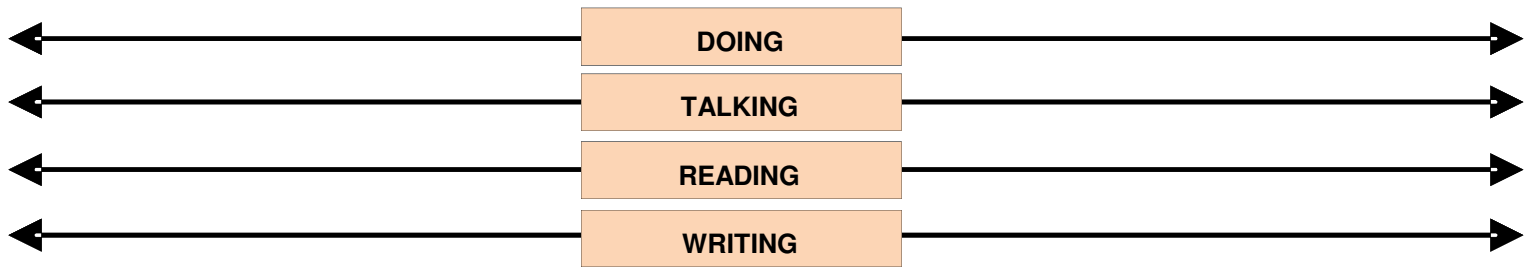
- Fundamental sense
- Derived sense

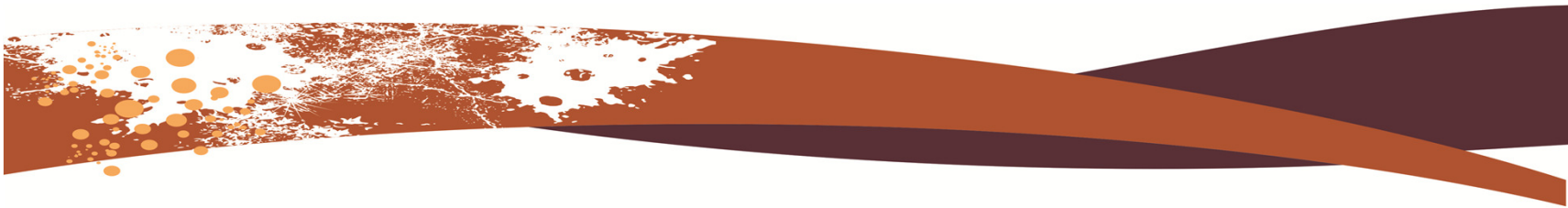
SCIENTIFIC LITERACY

A New Synthesis



Viv England
Richard Huber
Catherine Nesbit
Cynthia Rogers
Paul Webb



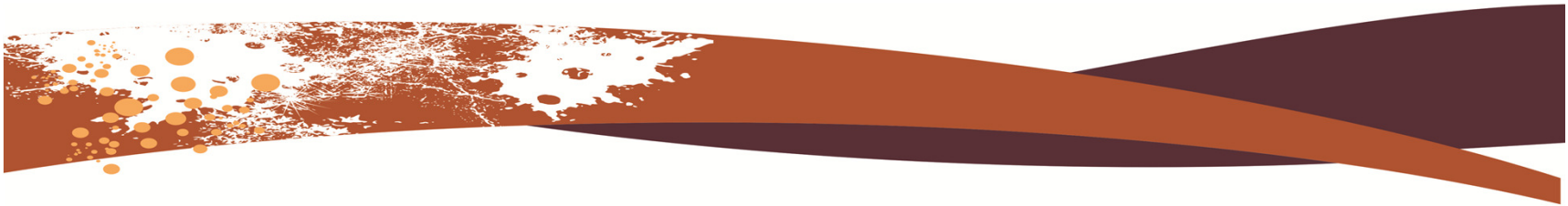


Measured

- Can teachers implement the strategy?
- Does it impact on the children's science and arguing skills?
- Does it impact on their general literacy?
- Reasoning skills



- **Strategy tested in:**
- Township and rural schools
- private and Montessori schools
- High schools
- Museum context
- Rally to READ schools (8 of 9 Provinces)
- 3 masters and 3 PhDs



- Can teachers implement the strategy?



- Impact on children's science and argumentation skills?

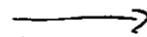
9-8-05

11:00 am

Q How many water drops does a penny hold?

P I think it will take 4-6 drops to cover a penny because the drops are a big size and the penny is small. Also there are not edges on the penny.

OR
actual water
drop size



Heads may be more raised so it will hold less drops.



The question is investigable ✓

The prediction:

- Connects to prior experience ✓
- Is clear and reasonable ✓
- Relates to question ✓
- Gives an explanation/reason ✓

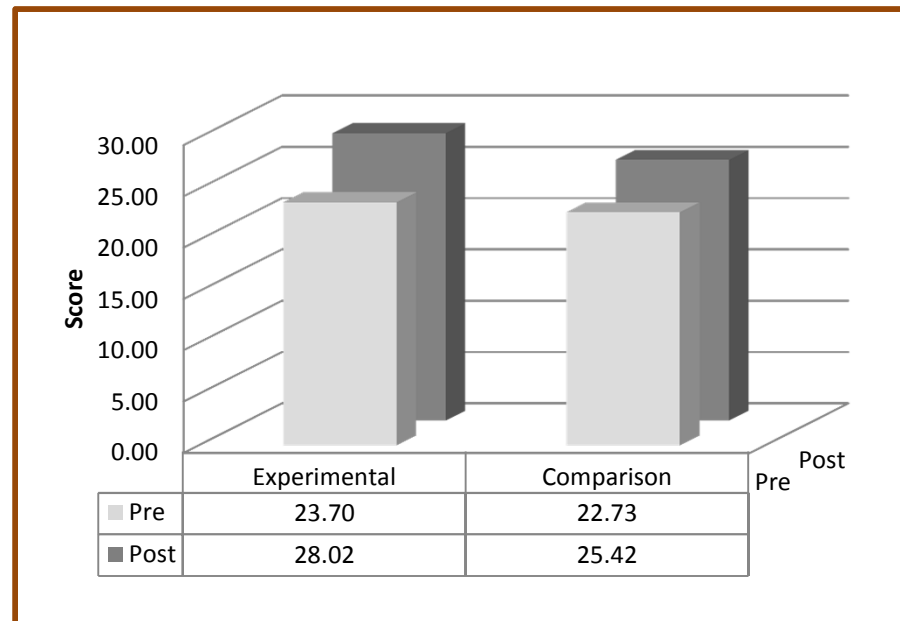


Language skills

Statistically significant improvements in pre-post test scores of experimental group over control in:

- **English reading skills**
- **Listening skills in both English and isiXhosa**
- **isiXhosa writing skills**

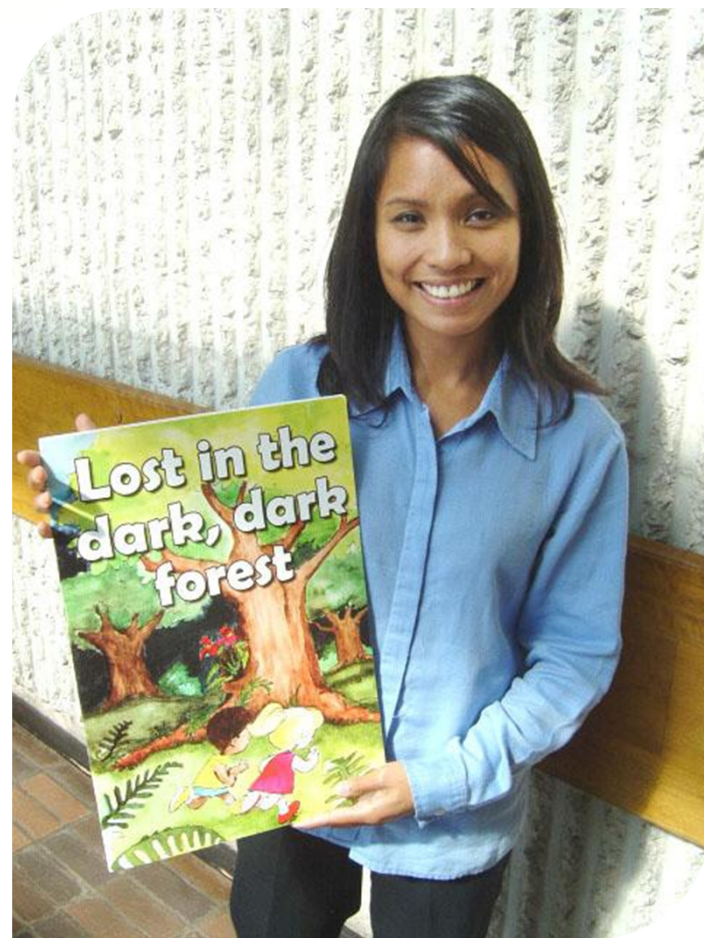
Reasoning skills



Using the reading stimulus



Reading to learn science



Reading





Thinking





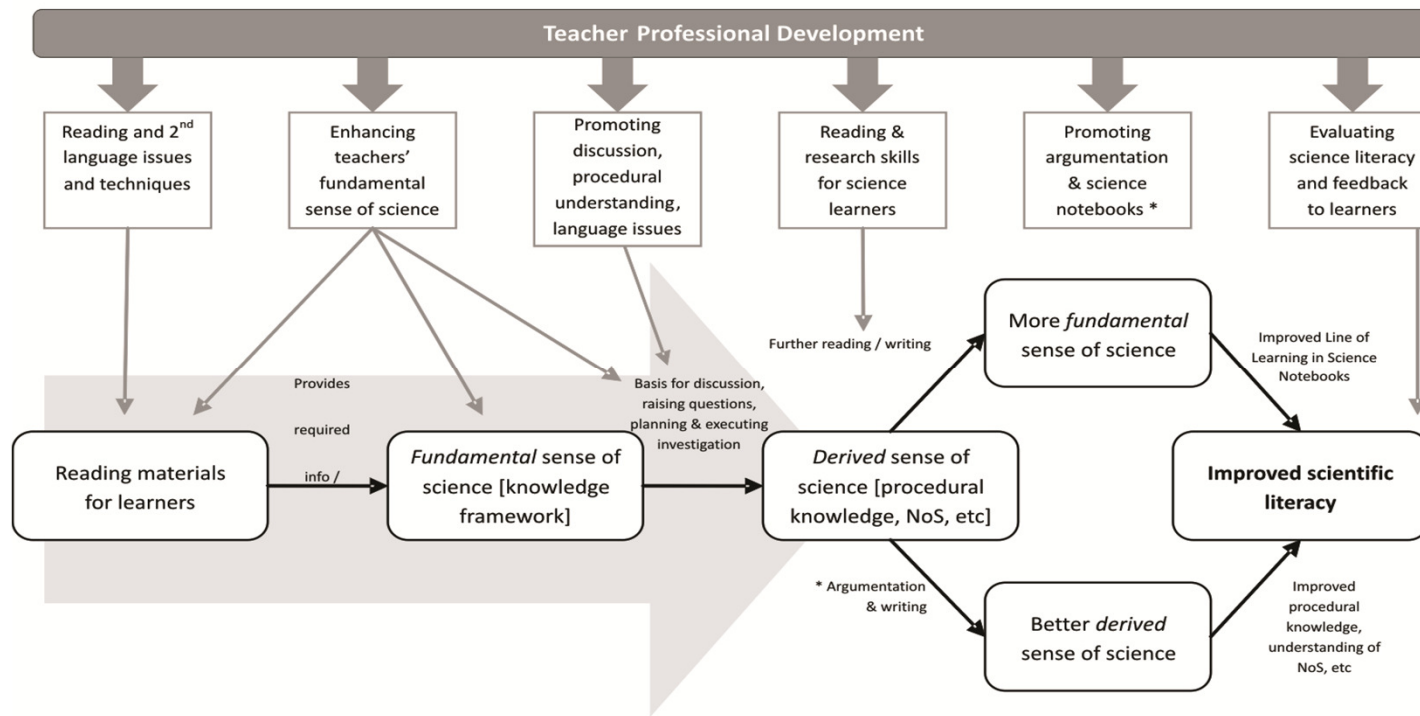
Learning to write science



Presenting



Implications for teacher development





Thank you