

## Writing Science

Presented by Jim Sturgiss



Regular writing of extended tasks is key to improving learning outcomes. Use SOLO to design engaging writing tasks to assess student understanding and misconceptions in...

Format: Face to Face

Audience: Teachers of Science Years 3 -12

### Description

Science requires students demonstrate explanations of phenomena by showing cause and effect and to evaluate the consequences for society. Student writing provides powerful evidence for student attainment of syllabus outcomes.

Regular writing practice in science, responding to rich syllabus based tasks will improve student learning outcomes.

Karl Maton from the University of Sydney claims that the academic/technical language of subject disciplines is characterised by semantic density. Maton acknowledges that subject-specialist teachers are experts in breaking down the technical language of their subjects to a less semantically dense, less powerful commonsense language for students.

However, he observes that students require opportunities to rebuild the semantically dense texts that are characteristic of the subject disciplines if they are to master subject-specific literacy.

In this workshop participants will:

- Analyse and differentiate student writing of explanations and persuasive texts using both a literacy and conceptual taxonomies
- Discuss the characteristics of rich writing tasks designed to elicit sustained writing from science students
- Analyse the Australian Science Curriculum for opportunities to ask rich questions of students.
- Create and share rich writing tasks that share a common assessment rubric
- Collaboratively use Google.docs to engage in a pedagogy and strategies to improve student writing and learning outcomes in science

### Additional notes about this format

The workshop utilises a blended delivery through presentation and online collaboration.

## **Occurrences**

There are no occurrences of this format in Australia (NSW) at this time.

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## Sessions

### Responding to writing tasks

**30 minutes**

Participants respond to two typical writing tasks (an explanation and a persuasive text) appropriate for Stage 4 Science.

### SOLO Analysis of student work samples

**45 minutes**

Science conceptual achievement demonstrated in student work samples is analysed using SOLO taxonomy as used in the VALID 8 science assessment.

### Analysis of student writing using NAPLAN style criteria

**1 hour and 30 minutes**

Participants will be walked through a NAPLAN style analysis of student writing. They will then apply the criteria to student work samples.

### Creating rich writing tasks

**1 hour**

Participants will analyse the Australian Science Curriculum for opportunities to ask rich questions of students.

Participants will create and share on a forum, rich writing tasks that share a common assessment rubric.

### Developing a pedagogy for writing.

**30 minutes**

Participants use google docs to collaboratively respond to a writing task.

### Peer review

**45 minutes**

Peer review of participant writing responses using established literacy and conceptual criteria.

## About the presenter



### Jim Sturgiss

#### Creator

Improving outcomes through aligned teaching practice synergies.

Jim is an educational researcher and independent educational consultant. A recipient of the NSW PTC Distinguished Service Award for leadership in delivering targeted professional learning to teachers, he works with schools to align assessment, reporting and learning practice. He has been a DoE Senior Assessment Advisor where he developed many statewide assessments, (ESSA, SNAP, ELLA, BST) and as Coordinator: Analytics where he developed reports to schools for statewide assessments and NAPLAN.

Selected NSW Department of Education and Communities appointments

2015 Analytics, Systems and Development Coordinator

2012 - 2013 School Assessment Design and Development Acting Coordinator (ESSA)

2007 - 2010 Head Teacher Science, Newtown High School of Performing Arts

2004 - 2005 Senior Assessment Officer, Computer Skills Assessment (CSA6)

2004 Test Development Officer, Secondary Numeracy Assessment Program (SNAP)

2000 - 2004 Head Teacher Science, Concord High School

1998 - 2000 Senior Assessment Officer, English Language and Literacy Assessment (ELLA)

Teaching Qualifications

1993 - 1997 M.Ed. (Hons) University of New England (Thesis: Literacy & learning in Science)

1979 Dip. Ed. University of Wollongong

1976 - 1978 B.Sc. University of Wollongong (Majors in Chemistry and Bioenergetics)





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Writing Science

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