High Challenge, High Support in Language and Literacy Education

SA Literacy Leaders’ Network: Language and Literacy Growth for all Learners

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Purpose of the paper

- To address **across-curriculum language and literacy needs** of diverse learners in schools + argue need for **high challenge, high support** curricula;

- To present **examples** from Year 6 and Year 7 Science programs that illustrate principles of high challenge and high support

- To address **implications of high challenge and high support** for diverse learners in relation to the Australian curriculum
Teaching across the curriculum: domains of knowledge

- Ability to identify students’ needs; and curriculum demands; ability to monitor on-going progress
- Ability to plan and implement high challenge programs at level of whole school as well at level of specific classes
- Ability to use teaching/learning strategies that provide intensive, explicit, targeted and timely interventions in response to students’ language and learning needs

needs analysis & assessment for learning
high challenge in curriculum content
high support
Teaching across the curriculum: relevant theories

Theories of assessment, Theories of curriculum knowledge (Social) theories of language & literacy

needs analysis & assessment for learning

Theories of curriculum Theories of learning (+ intellect chall) (Social) theories of language & literacy

high challenge in curriculum content

Socio-cultural theories of learning Social theories of language & literacy

high support
Theoretical assumptions about language

- Language is a social semiotic system and a resource for making meaning, not simply a conduit for information
- The choices we make when we speak or write don’t just transmit information, they make meanings
- Language is not neutral, rather it is ideologically loaded
Implications of these assumptions

- Language and literacy cannot be separated from meaning (and knowledge)

- In education, language and literacy cannot be conceived independently from curriculum content and knowledge (Lemke, 1990; Coffin, 2006 etc)

- All teachers are teachers of language and literacy as well as of science HSIE etc
Educational Context: features relevant to our research

- High proportion of EAL/D students in Australia and the diversity of their educational needs;
- Students face task of learning (academic) English while also learning through English;
- Task for teachers: to provide high challenge, high support learning environments, rather than simplifying the curriculum
Implementing High Challenge and High Support

Tools for implementing high challenge and high support

- Essential questions
- Rich tasks
- Backward mapping
- Substantive conversations
Essential questions and goals

For reflection

- Have a look at the Essential Questions and Goals of the Year 6 and Year 7 science programs:

- What is similar about Essential Questions and Goals; what is different?

- What might be the benefits of having both?
Essential questions
Year 6 Science: Vision

Key Concepts

- What are the basic properties of light and the relationship of light to eyesight?
- What are the parts and functions of human and animal eyes?

Relevance

- How can an understanding of light help us understand what it would be like to be blind or have a visual impairment?
- What ethical issues to do with blindness and inequalities exist for visually impaired people?
# Essential questions, Year 7

## Science: Elements, compounds and mixtures

**Key Concepts**

- What are the basic elements of the earth?
- How do we classify matter?
- How do scientists classify matter?

**Relevance**

- What are the practical implications/applications of knowledge of elements, compounds and mixtures?
- Why do we learn about matter?
- How can knowledge of elements of the world be of use beyond school?
Goals for Yr 6 Science

**Curriculum content**

- To understand the basic properties of light and its relationship to eyesight
- To identify the parts and functions of human and animal eyes

**Language**

- To define words associated with vision and light
- To identify bias in written texts and explain how language choices influence the reader
- Draw on research to produce explanations and expositions (working in groups or individually)
Goals for Yr 7 Science

Curriculum content
- Develop students understanding of key scientific concepts relevant to the study of matter;

Language
- Develop students understanding of, and ability to use scientific language and to justify inferences;
- Improve students’ writing skills, especially of science reports;

Other
- Develop students’ cooperative group works skills
So what are Essential Questions?

- Identify key knowledge constructs within the curriculum
- Ask big questions about which knowledge is important for students to learn and why it matters
- (differ from Goals that identify details of curriculum content + language that students will ‘cover’ in a unit of work)
Rich Tasks

For reflection

- Have a look at Rich Tasks of the Year 6 and Year 7 science programs (and other examples of Rich Tasks):
- What do you think are distinctive characteristics of these tasks?
- In what ways are they similar to, or different from, tasks that you typically set for your students?
Rich Task, Year 6 Science

As a group, your task is to undertake research to answer the following questions:

- What is nature, and what are the implications, of one type of visual impairment?
  (Procedure: oral explanation to be presented to your class + written explanation)

- What are some of the ethical issues that arise in funding of programs that address visual impairment (such as the Fred Hollows program)?
  (Procedure: oral and then written exposition)
Rich Task: Year 7 Science:

The task

❖ Who polluted Ropes River?: Use your knowledge of scientific procedures and analysis to identify the culprit who polluted Ropes River

Background

❖ Email request from principal: asking students to assist investigate a ‘complaint’ that someone from the school had been responsible for polluting the river,

Procedures

❖ Comparisons of polluted and unpolluted water
❖ Group experiments: filtration, decanting crystallisation, magnetic separation
❖ Solving the crime (based on scientific evidence)
❖ Writing of report based on experiment
## Other examples of Rich Tasks

<table>
<thead>
<tr>
<th>Subject</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English:</strong></td>
<td>students interview a number of people from a nursing home and write their biographies</td>
</tr>
<tr>
<td><strong>HSIE</strong></td>
<td>students design and perform the ‘Sunrise Show’ with a feature on Antarctica</td>
</tr>
<tr>
<td></td>
<td>students prepare and present an exposition on religions of the world</td>
</tr>
<tr>
<td><strong>Science</strong></td>
<td>students give ‘papers’ at a medical conference on diseases of the human body</td>
</tr>
<tr>
<td><strong>Maths</strong></td>
<td>students use measurement data and graphs to investigate and report on maths myths (myth busters)</td>
</tr>
</tbody>
</table>
So what is a Rich Task?

- Educational outcome of demonstrable and substantial intellectual value;
- Problem based;
- Has relevance beyond the school/ institution;
- Recognised as significant and important by students, teachers, parents, community;
- May be transdisciplinary
- (Typically requires prior development of relevant skills, understandings etc)
Backward mapping

- Having identified **Essential Questions** and **Rich Task**, how can you work from where students are at to where you want them to be by the end of the unit?

  - How will you build in learning of curriculum content + build to completion of the Rich Task?

  - How can you ‘scaffold’ and support students to develop the necessary skills; language structures; literacy abilities etc; that they will need to complete the Rich Task?
Providing high support: scaffolding

“(Scaffolding) is not just any assistance which help a learner accomplish a task. It is help which will enable a learner to accomplish a task which they would not have been quite able to manage on their own, and it is help which is intended to bring the learner closer to a state of competence which will enable them to complete such a task on their own.”

(Maybin, Mercer and Steirer, 1992)

- Emphasis on intellectual ‘push’
- Temporary nature of support
- Importance of handover
‘Designed-in’ scaffolding

- Students’ prior experience, curriculum demands;
- Curriculum goals (content + language) + Essential Questions & Rich Task;
- Selection and sequencing of tasks;
- Working with different participant structures;
- Message abundancy;
- Metalinguistic and metacognitive awareness
Selection and sequencing of tasks:
Yr 6 Science

- Group experiments on light and visual impairment
- Discussion of processes and outcomes of experiments
- Group library research, reading to identify relevant information about specific visual impairment
- Group discussion about how and why visual impairment occurred
- Reporting back to class (group presentations)
- Group negotiation of questions for visiting speaker (who was visually impaired)
- Review of model of explanation
- Group note taking to prepare for writing of explanation, then individual completion of explanation
# Working with participant structures

<table>
<thead>
<tr>
<th>TASKS</th>
<th>PARTICIPANT STRUCTURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group experiments</td>
<td>Groups</td>
</tr>
<tr>
<td>Discussion of experiments</td>
<td>Whole class + individuals</td>
</tr>
<tr>
<td>Group library research,</td>
<td>Whole class</td>
</tr>
<tr>
<td>Group discussion about how and why</td>
<td>Groups</td>
</tr>
<tr>
<td>visual impairment occurred</td>
<td>Whole class + groups</td>
</tr>
<tr>
<td>Reporting back to class</td>
<td>Whole class + whole class</td>
</tr>
<tr>
<td>Questions for visiting speaker</td>
<td>Groups + whole class</td>
</tr>
<tr>
<td>Review of model of explanation</td>
<td>Whole class + groups</td>
</tr>
<tr>
<td>Preparing and writing of explanation,</td>
<td>Whole class</td>
</tr>
<tr>
<td></td>
<td>Groups and individuals</td>
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</tbody>
</table>
### Message abundance

<table>
<thead>
<tr>
<th>Task</th>
<th>Part. Struct.</th>
<th>Message Abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group experiments</td>
<td>Groups</td>
<td>Physical manipulation of objects in experiments; peer discussions; teacher talk’ proforma for notes</td>
</tr>
<tr>
<td>Discussion of experiments</td>
<td>Whole class</td>
<td>Wall charts; teacher blackboard work; teacher support for students</td>
</tr>
<tr>
<td>Group library research,</td>
<td>Groups</td>
<td>Librarian support; books, videos, peer discussions; proforma for notes</td>
</tr>
<tr>
<td>Group discussion about visual impairment</td>
<td>Whole class + Groups</td>
<td>Teachers explanations; notes from proformas; wall charts and diagrams; new proforma to support prep of presentation</td>
</tr>
<tr>
<td>Reporting back to class</td>
<td>Groups + whole class</td>
<td>Students’ oral explanations; charts; graphs</td>
</tr>
<tr>
<td>Questions for visiting speaker</td>
<td>Whole class + Groups</td>
<td>Teacher suggestions, peer discussions, notes; wall charts, diagrams etc</td>
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Importance of language and literacy (and teachers’ knowledge about language)

In explicit teaching of language and literacy, including (as appropriate):

- Strategies for intensive and extensive reading
- Different text types and their structures
- Cohesion, incl paragraph organisation
- Vocabulary and Grammar
- Alphabet, spelling and punctuation
- ....

Theoretical knowledge also informs decisions about the which aspects of language and literacy need to be included into the program + when they should be taught
## Language and ‘meta’ focus

<table>
<thead>
<tr>
<th>TASK</th>
<th>LANGUAGE</th>
<th>METALANGUAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group exper</td>
<td>Context embedded talk; lang accompanying action; written notes</td>
<td>(talk about language)</td>
</tr>
<tr>
<td>Discussion of experiments</td>
<td>Language to reconstruct processes and outcomes</td>
<td>Support to sequence events; modeling of cause and effect sentences</td>
</tr>
<tr>
<td>Library research,</td>
<td>Reading; peer discussion; written note talking</td>
<td>Research skills of finding specific information; skimming and scanning; reading for detail</td>
</tr>
<tr>
<td>Group discussion, visual impairment</td>
<td>Peer discussions; teacher support with cause and effect sentences</td>
<td>Grammar of cause and effect</td>
</tr>
<tr>
<td>Reporting back to class</td>
<td>Extended explanations of visual impairment</td>
<td>Structure and language features of oral explanations</td>
</tr>
</tbody>
</table>
Importance of language and literacy (and teachers’ knowledge about language)

To inform programming

- Analysis of students’ current language and literacy abilities
- Analysis of curriculum demands
- Decisions about sequencing of tasks (in relation to language demands of those tasks)
Sequence of tasks from Unit on Vision

**Most spoken**

Group science experiments
Language accompanying action
Physical manipulation of objects
Shared negotiation of meaning
*Introduction of some technical terms*

Discussion of science experiments
Language reconstruction actions
Students’ turns supported by teacher
*Reinforcement of specific technical terms (technical terms + definitions on wall chart)*

Group library research:
Reading + use of internet
*Talk about reading: locating information; skimming and scanning; reading for detail; written note taking*

Reporting research outcomes to class
Shared oral rehearsal of presentations
Students’ talk supported by teacher and by pro-forma
*Structure of oral explanation*

Negotiation of questions for visiting speaker

*Format and tenor of questions*

**Most written**
Sequence of tasks from Unit on Vision (cont)

Most spoken

Review of model of explanation
Discussion of rhetorical structure and language features; oral modelling of written sentences

Group work on note taking to decide relevant information to be included in explanation
Talk + writing; students’ discussion supported by teachers

Most written

Students independent writing of explanations
Implications of high challenge

Exert pressure for teachers to clarify important key knowledge structures within the curriculum

Provide context for asking why: why is this curriculum content important; why it is worth studying; what is its relevance beyond classroom?

Provide opportunities for Substantive Conversations (ongoing, deep level discussions about curriculum concepts and ideas)

Require ability to work between levels of abstraction: concrete to abstract
Implications of high support

Systematic planning for **targeted and differential support**, along with selection and sequencing of tasks.

Emphasis both on *curriculum content and on language learning*.

Planning for rich ‘*message abundancy*’;

Support in language development enables students to participate in ongoing *Substantive Conversations*.
Teaching across the curriculum: domains of knowledge

- Ability to identify students’ needs; and curriculum demands; ability to monitor on-going progress

- Ability to plan and implement high challenge programs at level of whole school as well at level of specific classes

- Ability to use teaching/learning strategies that provide intensive, explicit, targeted and timely interventions in response to students’ language and learning needs

needs analysis & assessment for learning

high challenge in curriculum content

high support
The Australian curriculum: cause for hope

- Curriculum aims high and addresses key learning essential to each discipline
- Specific rejection of alternative or simplified curriculum for ‘disadvantaged’ students
- Explicit acknowledgement of importance of knowledge about language and literacy (in English curriculum)

→ Broad alignment between principles of high challenge and high support across the Australian curriculum, but …
Rejection of modified curriculum for ESL students

- One important lesson learned from past efforts to overcome inequality is that an alternative curriculum for students regarded as disadvantaged does not treat them equitably. It is better to set the same high expectations for all students and to provide differentiated levels of support to ensure that all students have a fair chance to achieve those expectations.

(Shape of the Curriculum, 2009, p8)
The Australian curriculum: some challenges

- While there is ‘space’ for language teaching across the curriculum, there is little explicit support for this except in the English curriculum.

- Our history of implementation of new curricula that include explicit knowledge about language suggests need for extensive professional support. In NSW, at least, it is not clear that sufficient support will be forthcoming.
References


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The Shape of the Australian Curriculum (May, 2009), National Curriculum Board www.ncb.org.au.


The Australian Curriculum, English, Consultation version 1.0.1, 2010.