Teaching ESL Students in Australia:

As Applied to the Teaching of NESB Students ‘Embedded’ in an Inclusive Middle School Science Classroom

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The Context

The context within which students are to be learning is somewhat determinative as to the specific approaches taken to address English language skills for students from Non-English speaking backgrounds. In this instance the assumption is made that students will possess basic interpersonal communication skills, such that they can participate within a regular classroom, but with limited, specialised or advanced English language skills. This assumption is based on the recognition that students with no (or extremely limited) English language skills are rarely placed directly into mainstream classes. This is also in recognition of movements towards more inclusive teaching practice in Australia generally and in Queensland specifically ('New Basics' Strategy to name one of many), where students with a variety of special needs, whether resulting from particular 'disorders' or from their background, are included within the regular class. This also reflects my own likely involvement with students of non-English speaking backgrounds.

As will become evident, some pedagogical practices are more appropriate to students at a particular level of development of English language skills. Also, within the 'Science' key learning area, there is significant terminology (vocabulary) that will be new to all students within the class, hence the practices employed to address the needs of NESB students can be readily applied to all within the class. To some degree science (like maths) is a universal language.

Approach

[Given the limited word count] The approach to be employed here is to formulate a table of pedagogical practice for the teaching of NESB students in years 8 – 10 science, in relation to the areas of speaking/listening, reading, writing, and dealing with vocabulary. They have been accumulated from both the multimedia program and elsewhere. Within this table a variety of practices under each of these four headings will be identified, their relevance to this particular context will be revealed, and a justification for their use will be given. This will facilitate a more efficient discussion of the relevant material, and will also serve as a useful tool for future reference (a ready-reckoner).

Skills/ Knowledge Area	Pedagogical Practice	Science Teaching Issues	Justification
Speaking/ Listening	**Controlled Conversation** (Jesness 2004, p.52) whereby students are given some freedom to discuss and describe actions which they are undertaking, with teacher feedback and subsequent questioning. Preliminary assignment of group members and teaching of relevant material prior to discussions must be undertaken, with specific attention being drawn to the language components (for all students) (Green et al, 2002, p.227).	This approach can be applied to group or experimental work, whereby the students can explain to the teacher or to other members of a (small) group, what they propose/are doing. Also presents opportunity to develop science specific vocabulary.	This 'direct approach' allows students to construct their own sentences and to practice language skills to their individual abilities without restricting the learning of the class as a whole, whilst also permits teacher lead development of language skills areas that need further development.
	Student to student teaching should involve an activity whereby one student undertakes an activity and subsequently explains to another student how they should complete the same activity. Students can either be paired off on the basis of linguistic ability or placed with students with good English skills.	Again, experiment-based classes allow for such an activity (and for more efficient use of limited resources) as each half of the class can complete a different experiment and then swap.	Students are free to construct their own sentences within a more rigid framework of the experiment, which focuses the language to that particular context. Listening skills are developed as the student must comprehend and remember the instructions being given. The are reinforced through subsequent performance of those instructions.
	Verbalising – students are to listen carefully to the pronunciation of words and repeat out loud. The examples used should be free from extraneous words that can confuse learning (Mangubhai 1999, Slide 222).	This can be applied with the inclusion of scientific principles and for the relevant nomenclature of the particular science area into sentences.	Students here an exemplary version of a particular word, or phrase and then have the opportunity to immediately repeat it, thus reinforcing the new language through practice.
	Repeating Rephrasing – whilst using the correct grammatical form/structure, the teacher reiterates points determined to be relevant to language development.	The restatement of a sentence with new scientific terminology allows all students the opportunity to listen to and learn that new terminology, but also allows for the learning/reinforcement of all language knowledge/skills relating to the non-technical components.	The repeating/rephrasing process allows students multiple opportunities to comprehend the phrases being stated, and more time . The subtly different approaches catering for student's variations of language skills (Mangubhai 1999, Slide 222).
	Visual cues – the use of graphical representations of the concepts/language being used	The science classroom lends itself to the use of visual clues, images, graphs, models, computer simulations, maps etc.	The language being used can be better contextualised, hence allowing for the student to develop their own understanding rather than using a dictionary (Mangubhai 1999, Slide 249).

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Reading	**Predictive/active reading** – before reading activity commences students are briefed as to the likely content of the piece and for details to pay special attention to/look for. Where the predictions as to likely content are "not confirmed, alternative hypotheses" should be developed and tested (Mangubhai 1999, Slide 110).	Documents relating to scientific discoveries/facts/process can be utilised. For example document relating to volcanoes could prompt students to come up with theories of how volcanic processes occur, and if not confirmed, investigate further the details that varied from their own predictions.	"The focus on reading should be on comprehension" (Mangubhai 1999, Slide 109). In this instance, reading is merely the starting point for further investigation, but also serves as a yard stick by which to gauge comprehension. Students both read the text and create their own sentences as questions.
	Schema – similar to the last category, students should be made aware of the background to the item that they are reading.	Students can be given all of the relevant scientific information, word lists, and be involved in discussions about the content, then subsequently investigate a related text to identify where discussions about the relevant content occurs.	Where students "do not have sufficient knowledge to understand a passage, even if their decoding skills and vocabulary are adequate, the passage will not make sense" (Jesness 2004, p.62). Knowledge enables students to identify key components of the passage, upon which to build understanding and interpretation.
	Vocabulary Approach – essentially involves learning all the relevant vocabulary associated with the topic.	Science can require the acquisition of much new vocabulary for all students. This helps facilitate a more even participation within the class as the vocabulary is new to all.	A "large vocabulary is vital is critical, not only for reading, but for all L2 language skills, for academic abilities, and for background knowledge" (Grabe 2002, p.278).
	Teacher modelling/strategic reading – whereby the teachers reads aloud a passage whilst also narrating the thought process (strategy) related to the decoding and comprehension of that text.	Both the reading strategy and the thought processes relating to the comprehension of scientific principles can be revealed.	Students get to hear an example of reading upon which they can base their own reading strategy. Students should be encouraged to analyse the teachers own strategy.
Writing	**Conferencing/Responding** – individual or small group attention can be directed towards NESB students within the class. The teacher quickly responds to drafts and provides useful suggestions.	None	This individual attention may be necessary, especially with writing, to ensure that the technical aspects are complied with. Assistance is provided in the development stages and not at the final assessment stage, thus assisting development of skills (Seow 2002, p.316).
	Pre-Writing – including processes of group brainstorming, clustering of relevant words, rapid free writing and wh' questions.	Students can quickly list all of the words relevant to the particular area of science under investigation.	This practice frees students from having to construct sentences 'out of the blue'. They can quickly compile the relevant words and fragmentary phrases on the topic and then compile them. Breaking the process down helps facilitate the sentence and paragraph construction process (as well as highlighting factual deficiencies) (Seow 2002, p.316).

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Writing	**Checklists/Editing/Rewriting** – students review their own writing, with the use of a checklist. When rewriting, students do not refer to their earlier drafts. Students can check either their own or other students work.	Students can be asked to create examples of scientific writing, which can be supported through the use of guidance and checklists relevant to that genre.	Through rewriting (rather than 'recopying') students have to become familiar with the "purposes" and "unique messages" of their writing. The checklists form a standardised framework of good writing practice (Seow 2002, p.318).
	Spelling – students learn or become familiar with the spelling of relevant words.	Lists of relevant scientific words/terms can be developed.	Spelling is seen as a vital component to all aspects of learning English, especially writing (Jesness 2004, p.65).
Vocabulary	**Verbalising** – students are to listen carefully to the pronunciation of words and repeat out loud. The examples used should be free from extraneous words that can confuse learning (Mangubhai 1999, Slide 22, 222).	This can be applied with the learning of scientific principles and for the relevant nomenclature of the particular science area. The ancillary language is also reinforced.	Students here an exemplary version of a particular word, or phrase and then have the opportunity to immediately repeat it, thus reinforcing the new language through practice.
	Layered Vocabulary/ Incidental Learning/Hierarchy – The direct teaching of the vocabulary most relevant to the subject at hand together with the concurrent learning of additional (non-specific) vocabulary, or the deductive learning of words through the context in which they are presented .	The science classroom is the site for the learning of explicit scientific terminology, both the relating to processes and things, but it can also be the location for the learning of other vocabulary.	Students can deduce the meanings of words within a sentence through their understanding of its other components (Jesness 2004, p.36). Inversely, unknown words in sentences can be 'picked up' even when not expressly the subject of the lesson (Hunt et al 2002, p.258). The teacher must identify those words that are commonly/frequently used, or most relevant to the class and teach those (Mangubhai 1999, Slide 22, 46).
	Analogy – the use of more common terminology to explain new words and their meaning.	Scientific principles can be discussed in relation to common household items or processes, using familiar terminology.	Through imagery and familiar terms, students can better recall new vocabulary (Mangubhai 1999, Slide 21).
	Intentional Learning of Vocabulary – explicit teaching of new words.	The teacher should chose terminology both relevant to the particular topic but which is also applicable more broadly.	Whilst still applying various useful techniques (above and elsewhere) time should be given to the intentional study of vocabulary.
	Maintaining Flow – continuing of the lesson whilst not correcting minor issues relating to incorrect vocabulary	Scientific misconceptions should still be corrected.	Minor errors need not be given precedence over getting across the point of the lesson. Especially when they can be corrected through 'Intentional Learning' later

Other Issues/Conclusion

The reductionist strategy in this paper, with the use of a table that summarises and discusses a number of specific strategies/practices, has oversimplified the dynamic of English language learning in the classroom. In addition to choosing a particular approach for any one lesson, a broader approach whereby the individual student, the class and the whole school/community setting must also be considered. An approach for one student, from a certain ethnic background, with particularly knowledge or language skills, may not be appropriate (or best) for another.

As we are not looking at the issues from the perspective of a 'stand-alone' ESL class, the strategies must be both useful for the students from non-English speaking backgrounds, but also must facilitate adequate progress in learning for all students. This issue has also affected the choice of strategy. It will also be evident that some of the more 'basic' or 'beginner-level' issues have been avoided in the table (basic pronunciation and reading skills for example). Again, this is justified on the basis of the context of this paper – being pedagogical practices for more advanced NESB students within a science classroom.

References

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