Secondary Immersion: Making the Connection between Complex Content and Advanced Academic Language

Philip Hoare
Stella Kong
Hong Kong Institute of Education

Principles

1. Content learning as priority: Complexity
2. Students' academic language development in L2
3. Content-language (English) integration

Theoretical framework

Content as priority

Focus on knowledge relationships between content/facts → higher order learning

Content objectives ↔ Knowledge structures ↔ Text structures ↔ Language objectives

Focus on organized use of language to respond to content/ meaning needs →C-L integration

Academic language development

Examples of knowledge structures

- Definition: term to be defined ↔ definition
- Description: object to be described ↔ description of features of object
- Classification: unclassified objects ↔ taxonomy of classification
- Sequence: event → event → event → event
- Comparison and contrast: similarities and differences between two or more objects
- Cause-effect: causes ↔ effects
- Evaluation: object to be evaluated ↔ evaluation
- Hypothesis: situation/event ↔ reasoned guesses etc.

Knowledge structures ↔ Graphic organizers

Knowledge structures ↔ Text structures

- Classification
- Sequence
- Comparison and contrast
- Cause-effect
- Evaluation
- Descriptive report
- Process description / Recount / Procedure
- Comparison-contrast
- Process / Factorial explanation
- Persuasion / Discussion

Process description

Definition of the process to describe:
Ventilation of the lungs is the process by which air is inhaled into and exhaled out of the lungs. This process is the first stage in respiration.

Description sequence:
When we inhale, air containing 21% oxygen enters the respiratory system through the mouth and the nose. The air passes through the larynx and the trachea into the two bronchi, which divide into many bronchioles. The air gets into the bronchioles, which connect to tiny sacs called alveoli. The air then goes into the alveoli, where gaseous exchange takes place. When we exhale, air containing less oxygen but much more carbon dioxide goes back from the alveoli to the bronchioles and then to the bronchi. From the bronchi, air goes up the trachea and the larynx and then goes out of the respiratory system through the mouth and the nose.

Language development: Gradual release of scaffolding (Examples)

- Blank filling with content words
- Blank filling with language (grammar) words
- Sentence starters
- Paragraph starters
- Text structures given
- etc.

Process explanation

Definition of the process to explain:
Air is forced into and out of the lungs by the ribs, the intercostal muscles and the diaphragm.

Explanation sequence:
When the intercostal muscles contract, the ribs move upwards and outwards and the diaphragm becomes flattened. This causes the volume of the chest to increase and the pressure inside the chest therefore decreases. Air is therefore drawn in.

When the intercostal muscles relax, the ribs move downwards and inwards and the diaphragm becomes dome shaped. This causes the volume of the chest to decrease and pressure inside the chest therefore increases. Air is therefore pushed out.

Process explanation

Content objective:
Students should be able to explain how air is forced into and out of the lungs by the intercostal muscles, the diaphragm and the ribs.

Knowledge structures:
Sequence + cause-effect

Text structure:
Process explanation [Definition of the process to explain ^Explanation sequence]

Language objective:
Students should be able to write a process explanation to explain how air is forced into and out of the lungs.

Sentence structures:
When we inhale / breathe in air, …
When ….. contract, … move
This causes ….

Vocabulary:
intercostal muscles, diaphragm, dome shaped

Gaseous exchange: Noun phrases

- *The (microscopic) size and the (large) number of alveoli in the lungs*
- *The (thin) boundary between the alveoli and the capillaries*

Tissue respiration

- *… is/are turned into …, releasing … .*
- *Respiration is the process by which ……*

References

- Derewianka, B. (1990). *Exploring how texts work.* Newtown: Primary English Teacher Association.
- Derewianka, B. (1996). *Exploring the writing of genres.* Hertz, England: United Kingdom Reading Association.
- Martin, J. R. (1989). *Factual writing: Exploring and challenging social reality*. Oxford: Oxford University Press.
- Martin, J. R. (2002). Writing history: construing time and value in discourses of the past. In M. J. Schleppergrell & M. C. Colombi (Eds.) *Developing advanced literacy in first and second languages,* pp. 87-118. Mahwah, New Jersey: Erlbaum.
- Martin, J.R., & Veel, R. (Eds.). (1998). *Reading science: Critical and functional perspectives on discourse of science.* London: Routledge.
- Mohan, B. (1986). *Language and content.* Reading: Addison-Wesley.
- Tang, G. M. (1994). Bridging Chinese-medium and English-medium content area instruction through cross-cultural graphic representation of knowledge structures. *Institute of Language in Education Journal, 11*, 99-118.