DESIGNING MATERIALS FOR CLIL

Phil Ball, Zaragoza, Feb 11, 2013
CLIL

CONTENT

LANGUAGE

INTEGRATED

LEARNING
CLIL – approach or method?

As a *methodology* the parameters can be more easily identified.
Assumptive teaching

(Iñaki in June)

(John Clegg)
Guide input
Support output
(Keith Kelly)

Let them do the rest!
DESCRIPTION OF PLANETS

The fifth planet from the Sun, it is eleven times bigger than the Earth. The year on this planet is a little less than 12 years on Earth, and the day is shorter than on Earth, about 10 hours. It is more powerful than the rest of the planets because it emits more power than it absorbs.

The sixth planet from the Sun, it is about 30 Earth years. The day is about 10 hours and it is the sixth planet from the Sun. It is the least dense planet of the solar system and is almost completely composed of gas. It is named after the father of Jupiter in Roman mythology.

The eighth planet from the Sun, though sometimes its orbital path crosses that of Pluto, so sometimes it is the ninth. It is four times bigger than the Earth. Its year is about 165 years and its day is longer than on Earth, about 19 days. It is the windiest planet in the solar system.

The seventh planet from the Sun, it is four times larger than the Earth. The year on this planet is about 84 Earth years and the day is 18 hours. It is made up of gases, rock, and ice. It is named after the mythological Greek god of the heavens.
To differentiate between the planets in the Solar System, by interpreting, transcribing and producing descriptions using derived adjectives, comparatives and superlatives.

Content to be acquired

Specific language items needed.

Language skills used to work on the concept
The Trinity, or 3-D CLIL
Content & Language Integrated Learning

Conceptual Content
Procedural Content
Linguistic Content
7 Principles of task-design (CLIL)

1. Guide input
2. Support output
   1. Scaffolding & Embedding (balance)
   2. Task primacy
   3. Make language **salient**
   4. Difficult texts do not exist!
   5. Think sequentially! (where you are in the sequence determines the task-type)
7 Principles of task-design (CLIL)

1. Guide input
Inventions can be the result of many processes and events. There are different reasons to explain why a particular invention appears. As you already know, inventions are often the work of a single inventor, like Thomas Edison. He was a special man who was always thinking of new ideas and trying to put them into practice. But other inventions are produced by teams of people working on a problem. For example, the first computers were too big and heavy, and they occupied too much space. The development of smaller, more efficient computers was done by a team of scientists.

So why do inventions happen? Usually it is because of a need - in response to a necessity. There is a famous English saying: “Necessity is the mother of invention”. For example, anaesthetic was invented because people suffered too much during operations. Robots were invented because industry needed to produce things faster, and fertilizers were invented because of the need to cultivate more food for a growing population.

Not everyone is good at inventing, although we can all try! The best inventors have always been creative thinkers. They have often had good imaginations like Leonardo da Vinci.

Inventions need materials. An idea is useless without them. A pneumatic bicycle tyre, for example, needs rubber. Without rubber, it cannot exist.

If we want to be inventors, we need imagination and materials, but we also have to think about how to promote our invention and find the people who will be interested in it.

And if we want to be famous, it is also very important to patent (officially register) our invention so we can prove that the invention was ours. We also have to think of the ethical consequences of our inventions. For example, the jet engine has responded to the needs of transport, but it has been used to kill millions of people.

Finally, it is worth mentioning that inventions are not always the result of one original idea. They are often the result of a historical process. The bicycle, for example, is a combination of many inventions - the wheel, tires, chains, brakes, spokes etc. So a series of discoveries or inventions can result in an invention that is very significant.
7 Principles of task-design (CLIL)

2. Support output
Before you can fill in the table below, you need to consider some criteria for judging the issue of positives and negatives. Use these Five:

(a) Ecological consequences
(b) Availability
(c) Renewability
(d) Expense
(e) Practicality

So, for example:

Looking at Hydro-Electric energy, we could work through the criteria then try to decide whether it is a 'Candidate for the future'. In other words, does it have a valid future as a source of energy?

(a) Ecological consequences?
Seems ok. Uses naturally flowing water to generate electricity. Does not cause any pollution. Dams sometimes cause controversy because they divert rivers.

(b) Availability?
It depends on the country and its type of landscape. Mountains and rivers are needed.

(c) Renewability?
Good.

(d) Expense?
Cheap, because it uses a natural resource.

(e) Practicality?
In pairs or small groups, work on the other sources and write notes in the columns. Always decide whether it is a ‘candidate’. If because of the evidence you are not sure, put ‘?’. (There is a similar table on p 54 in the textbook, but it lacks the 3rd column. Also, the table here below is more detailed regarding the specific types)

<table>
<thead>
<tr>
<th>Energy Sources</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>A candidate for the future?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydro-Electric energy</td>
<td>No pollution, cheap, abundant, easy to build.</td>
<td>Only available to certain countries</td>
<td>Yes</td>
</tr>
<tr>
<td>Nuclear energy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When you have finished the table, select three of the sources that you think are significant (for either negative or positive reasons) and write up the reasons you brainstormed. But write them as three separate paragraphs.

**Although, Although, Although……..**

**Such as, Such as, Such as……..**

**Tip**
This is a good chance to practise ‘although’ and ‘such as’. Choose one of the sources, and let’s imagine that you’ve said it is a candidate (because it has more advantages than disadvantages). You want to emphasise the advantages in your paragraph, but you have to mention at least one disadvantage (if it has one). So, in the case of Hydro-Electric Power, you could write:

“Although hydro-electric power has some small disadvantages, such as the problem of needing mountains and rivers, it has many more advantages such as…………..”

**Make sure you are clear what ‘although’ and ‘such as’ are in your language.**
7 Principles of task-design (CLIL)

3. Scaffolding and embedding
Diet and Disease

Part 6 Information section

Diet and disease

Certain diseases, such as coronary heart disease, breast cancer and bowel cancer are more common in some countries than in others. It is thought that some of these diseases may be linked to diet. Below is some information about them.

Obesity

People who weigh 20% more than the ideal are overweight. They have a shorter life expectancy and are more likely to suffer from diseases that include heart disease, diabetes, gallstone, high blood pressure, arthritis and varicose veins.

Some people put on weight easily. The reasons are not understood. They do not necessarily eat more than other people, but they eat more than they need and lay down the excess as fat.

Tooth decay

Tooth decay (dental caries) has been linked to diets high in sugars. Your mouth contains bacteria that break down sugars to make acids.

Acids attack tooth enamel, making it more porous. Tooth decay begins as the enamel wears away.

Heart disease

Death rates from coronary heart disease are often higher in countries where people eat diets high in ‘saturated’ fats such as butter, red meat, milk and cheese. A high fat diet can raise the level of cholesterol, a fat-like substance in the blood. Your body needs cholesterol, but when it collects on the inside of blood vessels you have a greater risk of heart attacks.

High blood pressure

High blood pressure is a condition that may lead to ill health. Doctors may advise patients to eat food without added salt, and avoid processed foods and ready meals which tend to be high in salt.

Cancer

People in different countries tend to suffer from different types of cancer. Scientists think that diet could be a major factor. It is difficult to be sure, because countries collect their statistics in different ways, so that the figures given here may not represent exactly the same thing. New studies should give more reliable statistics by the mid-1900s.

Breast cancer is increasing in many countries. Its cause is not known, but cancer rates can be compared with how much fat people eat in different countries. Some scientists suspect that many people could avoid getting stomach cancer if they ate fruit and vegetables every day. Cancer of the bowel may also be linked to a diet high in fat. Eating enough dietary fibre may help to reduce the risk of bowel cancer.

Alcoholic drinks may be linked to cancers of the mouth and gullet (oesophagus) as well as to cirrhosis of the liver and high blood pressure.
# Diet and disease - structure

<table>
<thead>
<tr>
<th>Diet and Health</th>
<th>Disease</th>
<th>Causes</th>
<th>Effects</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Keith Kelly
## Diet and disease – core content

<table>
<thead>
<tr>
<th>Disease</th>
<th>Causes</th>
<th>Effects</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>Eating more than we need and too many of the wrong things</td>
<td>heart disease, diabetes, gallstone, high blood pressure, arthritis and varicose veins</td>
<td>Eating a balanced diet and taking plenty of exercise</td>
</tr>
<tr>
<td>Tooth decay</td>
<td>Diet high in sugar</td>
<td>Acids in the mouth eating at the enamel</td>
<td>Brushing your teeth carefully, eating less sugary foods</td>
</tr>
<tr>
<td>Heart disease</td>
<td>Diets high in ‘saturated’ fats such as butter, red meat, milk and cheese</td>
<td>High cholesterol and risk of heart attacks</td>
<td>Eating less saturated fats</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>Processed foods and ready meals high in salt</td>
<td>Ill health</td>
<td>Avoiding too much salt</td>
</tr>
<tr>
<td>Cancer</td>
<td>Bad diet</td>
<td>Breast cancer, stomach cancer, bowel cancer</td>
<td>Eating carefully</td>
</tr>
</tbody>
</table>
## Embedded language

### Diet and Health

<table>
<thead>
<tr>
<th>Disease</th>
<th>Causes</th>
<th>Effects</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>Eating more than we need and too many of the wrong things</td>
<td>Heart disease, diabetes, gallstone, high blood pressure, arthritis and varicose veins</td>
<td>Eating a balanced diet and taking plenty of exercise</td>
</tr>
<tr>
<td>Tooth decay</td>
<td>Diet high in sugar</td>
<td>Acids in the mouth eating at the enamel</td>
<td>Brushing your teeth carefully, eating less sugary foods</td>
</tr>
<tr>
<td>Heart disease</td>
<td>Diets high in ‘saturated’ fats such as butter, red meat, milk and cheese</td>
<td>High cholesterol and risk of heart attacks</td>
<td>Eating less saturated fats</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>Processed foods and ready meals high in salt</td>
<td>Ill health</td>
<td>Avoiding too much salt</td>
</tr>
<tr>
<td>Cancer</td>
<td>Bad diet</td>
<td>Breast cancer, stomach cancer, bowel cancer</td>
<td>Eating carefully</td>
</tr>
</tbody>
</table>

Talking about cause ... is caused by ... comes from ... results from ...

Talking about solutions ... could be avoided by ...

Talking about effect ... can lead to ... is a result of ...
7 Principles of task-design (CLIL)

4. Task primacy
Before you look at the data on Beasain on pages 45 and 46, have a guess at the following questions. Do this in pairs.

1. Beasain is an industrial town. Would you expect more **women** or more **men** in the total population?
   Guess ________________

2. Industrial towns attract ‘migrant’ workers from other areas of the country. Would you expect more **women** or more **men** migrants in Beasain?
   Guess ________________

What percentage of the total population of Beasain do you think is ‘migrant’?
Guess ________________
Now look at the data on page 46 to work out whether your guesses were accurate or not.

Find two of the guesses that were wrong, and before your teacher asks you about them, try to justify why you guessed as you did.

For example:
“For Number 1, we thought there would be more men than women in the total population, because in an industrial town more of the workers are men.”

Be ready to speculate on the reasons why you were wrong.

For example:
“For Number 1, maybe most of the active population is married, and belongs to families? Industry might attract families, not single workers.”
7 Principles of task-design (CLIL)

5. Make language **salient**
7 Principles of task-design (CLIL)

6. Difficult texts do not exist!
(only difficult or easy tasks)

‘Text-task relationship'
Difficulty?
In the scholastic context?

• There is no such thing as a difficult text
• There is no such thing as an easy text

• Only easy or difficult tasks

Content-based approaches emphasise the PRIMACY OF TASK
On the theory of relativity
Einstein stated that the theory of relativity belongs to the class of "principle-theories". As such it employs an analytic method. This means that the elements which comprise this theory are not based on hypothesis but on empirical discovery. The empirical discovery leads to understanding the general characteristics of natural processes. Mathematical models are then developed which separate the natural processes into theoretical-mathematical descriptions. Therefore, by analytical means the necessary conditions that have to be satisfied are deduced. Separate events must satisfy these conditions. Experience should then match the conclusions. The special theory of relativity and the general theory of relativity are connected. As stated below, special theory of relativity applies to all physical phenomena except gravity. The general theory provides the law of gravitation, and its relation to other forces of nature.
Language-led CLIL (soft)
Content-led CLIL (hard)

Does it make any difference to task design?

No
7. Think in sequences!

Activities never occur in isolation