Section 1: Classroom

How does the content teacher support academic language in the classroom?

In this section, we will look in greater detail at exactly what is meant by supporting students with language in the content classroom.

We will begin (Objectives 2–4) by looking at the type of language needed to master content.

Subject-specific language that is essential in order to master content is often referred to as **content-obligatory language** and includes specialist vocabulary (Objectives 2 and 3) as well as functional language (Objective 4). This language is distinguished from **content-compatible language**, which is helpful but not essential for a particular subject. (For more information on this, see, for example, the work of Snow, Met and Genesee.[1])

We will then (Objective 5) take examples of tasks that content teachers would ask their students to do in class and identify the language demands of those tasks and suggest specific strategies that provide support.

These tasks will be broken down into the three areas we mentioned in the introduction: vocabulary, word and sentence level functional language, and language skills.

Objective 2: Identifying CALP vocabulary

Vocabulary, therefore, can be divided into **content-obligatory vocabulary** and **content-compatible vocabulary**. Content-obligatory vocabulary is *essential* to a particular topic and includes specialist terms. Content-compatible vocabulary is *generally useful* in the content subject.

[1]Snow, M., Met, M. and Genesee, F. (1989) 'A Conceptual Framework for the Integration of Language and Content in Second / Foreign Language Instruction', *TESOL Quarterly*, 23, pp. 201–217.

For example, if students are going to carry out a laboratory experiment in Science that produces salt crystals resembling a stalagmite, the content-obligatory vocabulary could include:

stalagmite, crystallisation, saturated solution, sodium acetate, beaker, Bunsen burner, tripod, gauze, goggles, low / high flame

This is called content-obligatory vocabulary because students are only likely to come across these words in particular lessons or departments in their school.

The content-compatible vocabulary that is generally useful when carrying out experiments could include:

carry out, observe, set up, add, measure, give off, react (violently) with, form

Students may come across such words in a variety of contexts.

Identifying content-obligatory and content-compatible vocabulary

It is useful to be able to identify both kinds of vocabulary in order to select which vocabulary students will be supported with. They may need help with both types, but a content teacher needs to be particularly aware of vocabulary that students will only experience in his or her specific subject.

Practical task 2

Identify content-obligatory and content-compatible vocabulary in the following topic areas. Try to do this for all the topics, whether you teach the subject or not. Use your first language if you don't know the words in English.

Geography

1 List content-obligatory vocabulary on the topic 'Glaciation', *e.g. tarn lake.*

2 List content-compatible vocabulary that you think is generally useful for this topic.

History

1 List content-obligatory vocabulary on the topic 'Slavery during the American Civil War era'.
2 List content-compatible vocabulary that you think is generally useful for this topic.

Maths

1 List content-obligatory vocabulary on the topic 'Ratios and proportion', *e.g. equivalent ratio.*
2 List content-compatible vocabulary that you think is generally useful for this topic.

Science

1 List content-obligatory vocabulary on the topic 'Photosynthesis'.
2 List content-compatible vocabulary that you think is generally useful for this topic.

Refer to the Answer key on pages 55–56 for some suggested answers.

Objective 3: Pre-teaching CALP vocabulary

First, the content teacher, perhaps with the help of an English language teacher, needs to identify the vocabulary that students need support with for a task. Then, the teacher will need some strategies for dealing with this vocabulary. Many teachers would build in a new stage before the task where the content vocabulary is **pre-used** or **pre-taught.**

Practical task 3

What strategies could you use to help students understand the meaning of the following items? Make notes.

1 conical flask, beaker, test tube, pipette, tripod
2 ribbon development, nucleated settlement, green belt, Central Business District, urban sprawl
3 multiply, divide, cube root, greater than, less than, decimal point, pi
4 first, then, wheat, harvest, export, store, silo, finally, insecticide, separate, chaff, next
5 robust, hasty, unnerving, heroic, solitary

Refer to the Answer key on page 56 for some suggested answers.

Strategies for dealing with CALP vocabulary

Here are some suggestions for dealing with vocabulary that can be used in both the content and English language classroom:

- At the beginning of your class, you could put a few key words from the lesson onto the whiteboard and ask students to **guess the theme of the lesson.** You could then ask them to very quickly brainstorm in small groups other words they would expect to come across in your lesson. This has the advantage of creating interest in your topic and of acting as a diagnostic of what they already know. When they have finished brainstorming, you can ask groups to call out words, and write those key words on which you want to focus on the whiteboard. You can then add other words that you identified when planning the lesson.
- Alternatively, you can put the words that you want to focus on directly onto the whiteboard. Then, divide your students into groups. Each group is represented by a different colour. **Give the definition of one of the words.** The group that calls out the correct word first has the word circled in their team colour. Once you have defined all the words, go back to the groups and this time ask them to define the words.
- You can put a simple **matching exercise** on a handout asking students to match words in the left-hand column to jumbled-up definitions in the right-hand column. Similarly, you could give your students words and sentences with gaps, and ask them to put the correct words into each gap.
- You could ask students to use **dictionaries** although you may find that this is too time consuming or that the definitions are not specific enough for your content subject.
- You can use your **classroom wall displays** as a resource. Your walls should have displays of useful key vocabulary, such as the names of important equipment in Science, as well as useful verbs and adjectives for your subject. Such display boards can either be bought commercially or produced by the students as project work. If your students' work is supposed to provide language support, you need to make sure that what they have written is correct and can be used as a model.
- You may be able to use **translation** if everyone in your class speaks the same first language. This needs care, as students may not know content-specific words in their own language. Also, overuse of translation may lead to students ignoring the English and waiting for the first language

Creative Thinking Skills: Cognitive processes that relate to functional language

<table>
<tr>
<td rowspan="4">7. Language for self-reflecting
Examples
• monitoring
• reflecting
• critically evaluating
• questioning
• self-correcting</td>
<td colspan="2">Language for describing</td>
</tr>
<tr>
<td>1. Language of classification
Examples
• classifying
• grouping
• categorising
• attributing
• defining
• naming / labelling / drawing
• prioritising
• comparing
• contrasting</td>
<td>2. Language of description
Examples
• observing
• describing
• comparing
• contrasting
• describing:
characteristics
function
properties
events</td>
</tr>
<tr>
<td colspan="2">Language for interpreting</td>
</tr>
<tr>
<td>4. Language of analysis
Examples
• recognising arguments, reasoning and explanations
• detecting errors in reasoning
• dissecting arguments
• clarifying meaning
• identifying purpose
• identifying bias
• problem solving
• conceptualising
• interpreting data
• visualising</td>
<td>5. Language of evaluation
Examples
• evaluating
• assessing
• judging
• criticising
• justifying
• making analogies
• making decisions
• recommending
• predicting and hypothesising</td>
</tr>
</table>

Adapted from Shaw, 2011 (unpublished). Builds on Bloom's taxonomy of educational objectives, 1956; Anderson and Krathwohl's revision of Bloom's taxonomy, 2001; Mohan's Knowledge Framework, 1986; Black et al. Critical Thinking Taxonomy, 2007; suggested IELTS skills taxonomies; contributions from Chadwick, 2011

3. Language of process
Examples
- describing a process
- sequencing
- using spatial temporal relationships
- describing cause and effect

6. Language of conclusion
Examples
- explaining
- suggesting
- hypothesising
- drawing conclusions
- developing
- considering
- reasoning
- presenting arguments
- presenting conclusions
- expressing personal opinions
- determining cause and effect
- evaluating

8. Language for creating
Examples
- generating
- communicating
- decision making
- responding
- planning
- producing
- constructing arguments
- selecting relevant material
- making connections
- making analogies
- making generalisations
- forming personal opinions

explanation. Nevertheless, there are occasions when translation is the quickest and easiest way to clear up any confusion.

- Vocabulary for a content lesson can also be learned in advance in the **English language classroom**.

NB: One strategy that is *not* a good idea is to point to a word on the whiteboard and ask, 'What does this mean?'. This is actually a very difficult thing for your students to do because they need very precise vocabulary. Try it for yourself with simple words like *saucepan, table* and *cushion*. For example: 'A saucepan is a round cooking utensil with a long handle and a lid used for cooking food.'

Objective 4: Identifying the functional language of CALP

The table on pages 12–13 shows a wide range of creative thinking skills that students are expected to be able to draw on and demonstrate in their lessons.

They are exactly the kind of higher-order thinking skills that teachers require from their students in today's classrooms. It is important when planning the different stages of lessons and the tasks that you want your students to carry out, that you are aware of precisely what the different cognitive demands in their lessons are. In order to help students develop and use these creative thinking skills in English, they need support with the functional language that goes with these processes.

Patterns in the Creative Thinking Skills model

The taxonomy, or model, represented in the table on pages 12–13 can be used for many different purposes. Here is an overview of how this model works for our Toolkit.

Boxes 1–6 list creative thinking skills that can be linked to the kinds of tasks students are asked to do in their lessons. In order for students to carry out these tasks, especially when working in pairs or groups, they need to be provided with the functional language that goes with these creative thinking skills.

Many of the examples in Boxes 1, 2, 4 and 5 include thinking skills and therefore language that may come in the early stage of a lesson when students are *in the process of understanding a concept*.

Boxes 3 and 6, to the right, include thinking skills and language that are used when the students feel they have *understood a concept* and are ready to demonstrate that understanding.

Boxes 7 and 8 include thinking skills that we could describe as a student's '*internal dialogue*', that is, skills that don't always involve language and communication, but that reflect a student's individual thought processes.

Creative thinking skills box by box

Box 1: The language of **classification** is the language students use when trying to make sense of something they are looking at and to identify patterns and relationships between items. For example, students check the pH value of various domestic items such as washing-up liquid, detergent, lemon juice, vinegar and so on, and group items together if they have common features or uses.

Box 2: The language of **description** is used to describe more fully, and give reasons for, the patterns and relationships students have found.

Box 3: The language of **process** is the language students use when making sense of, and then describing, how something works or is made, for example.

Boxes 4 and 5: The language of **analysis** and the language of **evaluation** refer to the language students use when engaging with input and drawing useful conclusions.

Box 6: The language of **conclusion** is the language students use to demonstrate that they have understood something, or formed an opinion about it.

Box 7: The language of **self-reflecting** represents a thread that runs throughout a student's learning experience. Students use these skills to develop their awareness of the learning process.

Box 8: The language of **creating** also refers to creative thinking skills that students use throughout their learning. For example, when they classify, describe, analyse and evaluate input, they make connections and develop conceptual understanding as a lesson, and a curriculum, progress.

Creative thinking skills and functional language

Many of the creative thinking skills can appear in more than one box. For example, hypothesising can be placed in Boxes 5 and 6. In terms of Box 5, a student may be guessing (rightly or wrongly) what might happen in a Science experiment. Equally, referring to Box 6, a student may be presenting their conclusions of what they discovered from that experiment. Some of the functional language for hypothesising would be the first and zero conditional:

Box 5: ***If*** *we* ***mix*** *sulphuric acid with water, we think the water* ***will change*** *colour.*

Box 6: *We have proved that* ***when*** *we* ***mix*** *sulphuric acid with water, it* ***gets*** *warmer because it is an exothermic process.*

A further example of functional language relating to thinking skills can be taken from Box 6, evaluation – if students are asked to present conclusions they have drawn from doing an experiment, either in a discussion or as a piece of writing on a laboratory report, the functional language that students need to carry this out will include structures such as:

Next time we would also try to measure …
One thing we would do differently next time is …
It would have been a more effective experiment if we had …
We were unable to … because …
One part of the experiment that worked well was …
It would be better to …

Sentence stems like these can be included on classroom handouts or be written on the whiteboard while students complete the task. We will come to how we support this kind of language in more detail later.

There are many advantages to giving students language support in this way. In the case of the structures for evaluation:

a It will help those students in class whose language is weak.

b By implication it means it is a part of a teacher's differentiation strategies regarding their lessons.

c It keeps all students focused and on the topic.

d It sets an appropriate academic tone for this kind of task, which has the advantage of making students feel like scientists and engage more with the task.

e It discourages students from giving a superficial evaluation that 'everything was fine'.

f It supports the students' understanding of the teacher's spoken instructions when setting up the task.

Practical task 4: matching language to thinking skills

First, match the functional language below (a) to (e) below to the thinking skills listed in Column 1 of the table. Then, try to write full sentences from this and similar functions. An example from Geography is provided.

a *We know this text is objective / subjective because …*

b *Firstly, secondly, then, after that, finally … / A is added to B, C is emitted causing D to occur …*

c *X is a … which we use to …*

d *It is often said that … , but I think / In my view, … / I believe …*

e *We should / ought to / could try …*

Thinking skill	What the students are doing
1 classification	defining:
2 description	compare and contrast: *Limestone is a porous rock whereas granite isn't.*
3 process	sequencing / describing a process:
4 analysis	detecting purpose / bias (usually in a text):
5 evaluation	recommending:
6 conclusion	expressing personal opinions:

Refer to the Answer key on pages 56–57 for some suggested answers.

Supporting the language needed to carry out the task

As well as the content vocabulary and structures a student may need *for* a task, a teacher may consider giving support with the language *of* the task. For example, if in Maths students are playing a board game using dice, they will need language such as:

You go first.
It's your turn.
I don't think that's the right answer.
Roll again.
You miss a turn.

Some teachers may feel that their students don't need a focus on this type of language in the content classroom. However, it is quite easy to provide and as well as supporting language, it emphasises that students are expected to work co-operatively and in English.

Objective 5: Identifying the language demands and the support we need to give for tasks in the classroom

We will now look at some tasks that students could be given to do in their content classrooms, with four examples taken from Maths, Science, Geography and History. Both English language teachers and content teachers from any subject should look at all four subjects as there are useful principles in each example for any content subject and important implications for the English language classroom. After each example, there is an opportunity to practise.