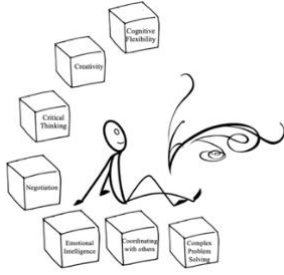


Scaffolding Academic Language with Hieroglyphics (Higher Education)



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theory behind the scaffold...

Educators and owners of academies who claim to teach critical thinking, usually assume that it is a skill similar to riding a bicycle – once you master the dynamic you don't have to dedicate an inordinate amount of time practicing, just enjoying the benefits. That might be true if we were referring to day-to-day, minute-by-minute thinking, which comes effortlessly and endlessly. The concept of *critical* thinking, however, is more complex. To arrive at any complexity of thinking, the brain has to put a lot of wheels to into motion.

When giving students opportunities to widen their skills to think critically, we cannot separate the techniques from content (the 'domain knowledge'). For every subject, issue or challenge, there is a separate and different technique that needs to be used to help the mind expand and consider the issue from all sides. This is crucial for educators to know and appreciate because for our students to be able to be skilled in lateral thinking, they need to learn techniques that are tied to specific content.* So, for our students to be divergent and efficient thinkers, they need to have a warehouse of techniques available to use one of them depending on the situation.

This scaffold is one of many of these techniques. With it, we use an adaption of the ancient Egyptian hieroglyphics – visual clues - to promote critical thinking. Using images is a powerful learning tool for all students (studies show that using an image with text doubles learning); however, visual learners, who are often overlooked in favour of the more usual linguistic learners, will be most enthusiastic about this opportunity to demonstrate their strengths.

To successfully decipher the combination of images and textual puzzles, students need to tap into inferential and deductive reasoning. They examine images and decode how they are linked phonetically. When spoken aloud, students will realise that they are decoding the academic language that will appear in their next unit of study.

As in all scaffolding activities, don't get caught in the loop of believing that activity steals lesson time. This activity saves you an enormous amount of time in the end, because students are pre-learning essential information so that the rest of the lesson or unit will flow more naturally. At the same time, you'll have brought a bit of lightness to the classwork, and you'll see your students continue with more energy and enthusiasm.

- *Willingham, Daniel T. (Summer, 2007). ['Critical Thinking: Why is it so hard to teach?'](#) American Educator. *step by step...*

step by step...

Note: Instead of targeting one specific unit, this scaffold encompasses the academic language of a set of units. In other words, the scaffold highlights the vocabulary and terms that appear in various units of - in this case - the study of natural sciences. It's also essential to put the words in context, so there are two parts to this scaffold.

Part I

1. Choose 10-15 academic terms from an overview of the academic language found in the next few units of your students' resource.

Example of academic language from a Natural Science book that spans a school year:

- neuroscience
 - theorum
 - endorphin
 - circular
 - deficit
 - hypothesis
 - carbohydrates
 - control
 - ecology
 - acupuncture
 - syringe
 - experimentation
 - organism
 - observation
 - thermodynamics
2. To prepare the activity, say each of the terms aloud, slowly, and write out the sounds and syllables you hear yourself saying. (Download [this mp4](#) to give you an idea on how to do this.)
 3. As you hear yourself vocalise the sounds, think of images that match parts of these vocalisations. Connect images with a plus (+) or minus (-) sign, and, when needed, any letters that are necessary to complete the term. (See example below.)

Example: From the list of vocabulary, you choose neuroscience. You say neuroscience aloud, very slowly and deliberately, and it may sound like this:
new + row + signs (- gns) + ants

So, you find images of:



On the set of mini-cards you prepare for your students, you present the hieroglyph in the following way:



Your students take turns vocalising the images, negotiate meaning, and eventually pronounce them so as to intuit that the term the images represent: in this case: 'carbohydrates'.

two other examples:



(endorphins, brain)

4. Once you've finished creating hieroglyphics for each of the academic terms, print them on separate mini-cards, and make a set for each pair of students.
(Download [this PPT](#) with examples of hieroglyphs from many different subjects.)
5. *Important:* As this may be the first time students see these terms, at some point in the activity (towards the end) we need make visible the of academic terms we've coded into hieroglyphs. They'll need this to connect their vocalisations of the images to a concrete term they'll see in their reading.
6. Students work in pairs (or groups of three) to decipher the hieroglyphs.
7. Groups who finish early use the academic language they have just deciphered to make sentences. (Example: *My mother studied to be a neuroscientist and now she works in a laboratory studying the pathways of the nervous system.*)

Part II

- a. On a separate worksheet that you'll have prepared, students now work in different pairs to choose the appropriate definition of the academic terms that they've just deciphered. You'll give them a clue that refers to the images in the hieroglyphs, so they are more likely to match the definitions to the appropriate academic terms. To encourage them to process the definition, they justify their choices by elucidating the connection of the image to the term, and then paraphrase the definition. (See examples below.)

example:

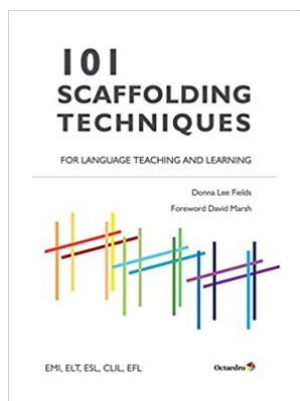
What is the academic term?	Definition and Clues	Our justification for choosing this academic term:
neuroscience	<ul style="list-style-type: none"> • the study of chemistry, pharmacology, and the pathology of the nervous system • When a boat has oars, we row it to make it move. 	One of the images shows a boat, with a child rowing the boat to make it move. Neuroscience is about studying the pathways of the nervous system, plus many other sciences.
brain	<ul style="list-style-type: none"> • a mass of nerve tissue in the head • this creature makes honey 	One of the images shows a bee. Bees make honey. 'Bee' is a part of the word 'brain', which has nerve tissue.
	etc.	etc.

- b. *Reflection*: Students write the answers to the following questions from the Question Continuum. (*Remember, some questions reflect content and others reflect methodology thus augmenting [self-efficacy](#).*)



- Yes/No Did you work with a partner to decipher the hieroglyphs?
- Which Which hieroglyphs were the most challenging?
- Who Who do you know who works in neuroscience?
- When When is a theorem and a hypothesis proven?
- Where Where is the most deficit found in experimentation?
- What What is the difference between the use of a syringe and needles used in acupuncture?
- How How difficult was it to paraphrase the definitions of the academic terms you deciphered?
- Why Why is it important for you to be familiar with academic language?
- What if What if you had the choice between studying thermodynamics and ecology? Which would you choose and why?

find more scaffolds here...



[amazon.com](https://www.amazon.com)



[amazon.es](https://www.amazon.es)

video explanation...



transcript of video explanation...

Hi. I'm Donna Fields and welcome to CLIL Scaffolding 11. It's a series of webinars designed to give you support for using scaffolding in your lessons. Today we're going to use scaffolding technique #104. One hundred and one more of these techniques can be found in my book: *101 Scaffolding Techniques for Language Teaching and Learning*, that has also been translated into Spanish.

We can use Jerome Bruner's definition of scaffolding: a technique or activity that targets skills students need to learn difficult tasks.

Today's objective is to show how sequencing can be used to develop inferential reasoning. I'm going to show you in a primary and secondary lesson and you can use it at any level you need it for.

Let's start with a secondary literature lesson. Your students need to read the autobiography of Nelson Mandela. One way to help them with the scope of time that is covered in the book is by choosing key moments in the author's life, making them visible, and letting the students order them sequentially. They talk about these key moments, and *also* what might have happened in between these benchmarks - both in history and in the author's life.

So, what do we do?

- Choose 8-10 key moments in the text we're going to use with our students
- Find images that represent these key moments
- Place both in textboxes
- Include a very short caption under each image explains it very briefly
- Print out a set for each pair of students in the class (using coloured paper helps keep the material organised. It's different from the worksheets the students get, it changes the atmosphere of the lesson, it's easier to keep the sets separate, and colours are wonderful!

In pairs, students put the images in order, according to the information in the captions. They then verbalise what they see, using the captions - and expanding on them. Here's an example:

A pair of students might have this exchange with the first two images:

Student 1: Nelson Mandela was born on the 18th of July, 1918 in Transkel, South Africa, South Africa is on the continent of Africa.

Student 2: Nelson Mandela's father died in 1930. So he was 12 years old. He was brought u by the king of his tribe, Jongintaba...I can't pronounce his name!

In both instances, the little bit of information you've given is a scaffold in itself - you've given the students the confidence to dare to make complete sentences and also to add some information by themselves. By saying 'I can't pronounce his name' is a valid addition. The student is communicating a thought aloud in a language that probably isn't her home language.

After the students have verbalised the information literally, you can now encourage them to use inferential reasoning to make suppositions about what happened - either in the author's life or in history in general - between the key moments they have represented in front of them. You can use questions like these that provoke deeper thinking:

- What happened in between the dates mentioned?
- What affect do you think Mandela's surrogate father had on him, being a tribal leader and king?
- What schooling did he probably have due to the fact that he opened his own law firm?
- What do you think led him to begin a campaign of civil disobedience?
- Why do you think the F.W. de Klerk won the Nobel Peace Prize with Mandela?
- What type of president do you suppose Mandela was?
- What do you think he did after being president?

To answer them, they need to pull from their knowledge of historical events and human nature in general.

An example of this further discussion might be:

Student 1: Nelson Mandela was brought up by the king of his tribe and opened the first black law practice in South Africa in 1952. Maybe he had the courage to open the first black law practice in South Africa because of the courage the king gave him.

Student 2: Maybe he became a lawyer because he learned from the King that to be a leader it's important to know the law.

Now you can all begin the autobiography and your students will be more invested in the causes and consequences of Mandela's life given their own internal and verbal processings.

Let's try it with a primary Social Science lesson. Your students are going to learn about the process of recycling.

You have the process represented in images. You print out a set of the images for each pair of students, cut them up individually, and give a set to each pair. The students put the images in order and verbalise the process of recycling. In this case, you can give the students vocabulary to use to verbalise the images.

An exchange between two students might be something like this:

Student 1: In the first pictures, I see a hand taking a bottle with orange liquid and a bottle of white liquid behind it.

Student 2: In the second picture, I see a boy with a glass in his hand and another person pouring orange liquid into the glass.

Here are some questions you can give them to encourage them to think about recycling in their own lives and make inferences from the pictures.

- Should recycling be taught in school?
- What kinds of things do you think cannot be recycled?
- Do you think people should receive rewards for recycling?
- Do you think people should receive fines for not recycling?
- If you had a choice to buy a sweater made from recycled fibers or one that hasn't, which one would you choose?

Now they are ready to absorb more information about the subject because they've been given the opportunity to think about it and make connections to their own lives beforehand.

And that's it! Another simple scaffolding technique that I hope you can use in your classes. I look forward to any comments you have.

You can find me at these sites:

<https://scaffoldingmagic.com/>

and

[Linkedin](#)

[Pinterest](#)

[Facebook](#)

[Instagram](#)

[Tiktok](#) (scaffoldingscaffolds)

So all you SUPER TEACHERS out there - I look forward to seeing you next time. See you soon! Bye!

*Willingham, Daniel T. (Summer, 2007). 'Critical Thinking: Why is it so hard to teach?'. American Educator.