Scaffolding Visual Information in Strips (Secondary)

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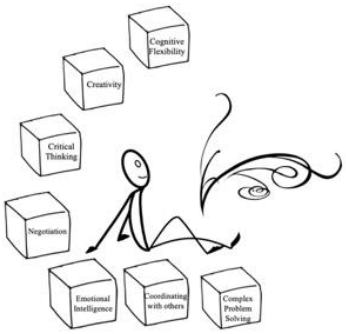


theory behind scaffold...

One of the most common go-to words to explain scaffolding is 'chunking'. Chunking is the strategy of breaking down material into digestible proportions in order to avoid cognitive overload. If you accept the studies (and there are a lot of them and they are consistent in this conclusion) that the human mind is able to only process seven new elements at a time, chunking information gives students the emotional and cognitive space to transition more easily into new knowledge. When we add strategies in activities that promote critical thinking, collaboration, negotiation and prediction - all through visual means - we've created a powerful means of presenting new ideas to our students.

This scaffold technique also includes categorisation which, according to Morton Hunt*, one of the pioneers of the study of the mind, has been proven to yield educational efficiency and helps the brain process information more fluidly. Depending on the topic, making the effort to categorise new knowledge can help students feel more connected to the world around them, and make sense out of what can feel like chaos at times.

In this case, students work in pairs (or groups of three) to piece together the meaning of an image that has been intentionally divided into chunks (strips). They verbalise what they see and predict what they believe will appear on the next strip. The study, negotiation, conversation, and deliberation of this process leads to a deeper understanding of the underlying concept. When text is included in the activity, linguistic categories are added to the complexity of their conversations and predictions.

The strategy of making predictions actively engages students. It helps them to make connections between prior knowledge and the information they see before them. With activities such as this scaffold, students will learn the habit of thinking ahead, refining, revising, and verifying their predictions. Further, embedding opportunities for suppositions in activities is a valuable way to assess student comprehension of subject matter (formative assessments).**

The example given here is from a lesson on interpreting graphs of human population growth, and you'll see how you can easily adapt it to any unit you're about to begin.

** *Hunt, Morton (1982). T*he Universe Within: A new science explores the human mind. *Simon and Schuster.*

step by step:

1. Choose an image (with or without text), from the unit you're about to begin and paste it onto an A4 piece of paper.
2. Make enough copies for each pair of students.
3. Cut the photocopies into either vertical or horizontal strips with a cutting board. (See example below. If you print the image on different coloured paper, you can cut 5-6 at a time and then they are easily separated.)

4. Give one set to each pair of students and they divide the strips up evenly between themselves.
5. Make key academic language visible so that students have the tools to be able to talk about the image more easily.
6. The activity proceeds in the following way:

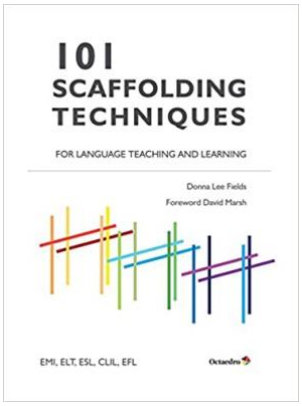
    - **Student 1** puts down one of the strips and verbalises the images/text seen on that strip.
    - **Student 1** makes suppositions about what is missing on either side of that strip.
    - **Student 2** looks through the strips in her/his hand, chooses the appropriate one, puts it down next to the corresponding strip, and then verbalises what is seen and what is missing.
    - This dynamic continues until the image has been put back together. (It's important that students take time verbalising what they see as much as possible. You can make it clear that speed is not the objective, but rather the use of academic language, discussion, prediction, are the goals for this activity.)

Example: (You'll note that this conversation would be very different if the strips were cut vertically. You make decisions on the cut-style based on the information you'd like your students to focus on.)

- Student 1: *On this strip, I see more people between 45 and 49 on the right pyramid than on the left. We need to find the strip of people older than 49 to see if the right-hand pyramid has more or fewer people later on.*
- Student 2: *Yes, I have the strip with people 60-64. There are fewer people. Do you have the strip of people older than 64?*
- *Etc.*

6. *Formative Assessment*: In pairs, students write a paragraph summarising the information they've interacted with in the activity. (In this case, the students would summarise what the different types of population pyramids indicate.)
7. *Reflection*: In pairs, students share how they felt about the activity and whether it will help them understand the unit in a more engaged manner.

Find more scaffolds here:



video explanation of the scaffold…

transcript of video explanation...

Hi! I'm Donna Fields and welcome to CLIL Scaffolding 3. It's is a series of webinars designed to give you quick, easy and adaptable scaffolding ideas.

We can say that scaffolding is giving a helping hand to students when they are transitioning from past knowledge to new knowledge.

Today, we're going to go over how to use Scaffolding Technique #6 from my book *101 Scaffolding Techniques for Language Teaching and Learning* that's also been translated into Spanish.

The objective for this session is to show how easy it is to adapt Scaffolding Technique #6 to primary and secondary lessons. Don't forget to post your objectives every day in your classes. It helps students feel more respected and integrated in the learning process.

Scaffolding technique no. 6 is called 'Striptease'. It's a play on words because we're going to be talking about a type of puzzle that uses strips of paper. If you don't know what 'striptease' means, this is a great opportunity for you to look it up and have a laugh!

Let's start with a secondary social science lesson. You've come to the chapter on population pyramids. You know that it's important that your students understand them, but your experience has been that it's difficult to engage them. You can see cognitive overload in their eyes the minute they come to the chapter that introduces them. What can you do?

Take the topic out of the text books, get away from worksheets, don't introduce definitions yet. Present something really different and intriguing that will help them first form their own ideas about representations of the topic before being told what they mean. If students see that their ideas are respected and have a place in lessons, they will be more willing to hear the ideas of other's.

So, scaffolding the images gives students the opportunity to verbalise what they see and lets them predict what the different shapes mean. Verbalise thought processes is a skill that is known to help students move forward in their learning.

Making the puzzle is simple. We take this page from a chapter on population pyramids, use the graphics, print out one image for each pair of students and then cut them up into preferably an even number of strips.

You need to be conscious of where you cut. The information needs to be divided so as to challenge your students but also to give them enough clues that they can make justifiable predictions. In this case, I've decided to cut the image horizontally, because I want the students to focus on the significance of the graduation of each pyramid.

Next, I'd give a set of strips to each pair of students and each student takes half of the strips. (I mix up the sets before I hand them out so that they don't have one determined half of the image.)

Now, one student in each pair puts one strip down, verbalizes what s/he sees and then makes a prediction about what's missing on either side.

This is followed by the other student in the pair looking at the strips s/he has, putting down the appropriate one to the right or left, and then describing both. That student also makes predictions about what is missing.

To help students be more fluent in their discourse, you can post the beginnings of sentences such as:

In this strip I see...
I see a part of...
Based on what I see so far, I predict that the strip above...
Based on what I see so far, I predict that the strip below...

I'm not sure...however...
It seems to me that...
You were justified in your prediction that...

Here is an example:

Student 1: I see three images divided by a yellow bar. I see red and green lines on either side of the numbers. The numbers are divided by four - 20-34, 25-29, , 35-39, etc. I don't have enough information from the figure in the middle to predict what is above or below and I don't know what the numbers mean, but based on what I see so far, I predict that the image on the strip below will have numbers 20-24, 15-19, 10-14, and the red and green lines will be longer than in this strip.

Student 2: I see that you were justified in saying that.... Based on what I see, the image in the middle of the strip above the 49% could equal 100% so it could be 25%...

Students can talk specifically about the numbers, but they can also talk about the colours, about the size of the lines, about what they think the images mean - anything that occurs to them. We want them to interact with the material in any way they can, using past knowledge to predict what might complete the puzzle.

The activity continues in this way until all the pieces have been described, predictions have been made, justifications for the predictions are stated, and all the strips have been placed on the table.

Now is when you explain what the graphs really mean and they can work in their textbook to understand it more fully.

META TALK:

Effective teachers think aloud on a regular basis to model the process for students. Think-aloud strategies encourage students to say aloud what they are thinking when trying to problem solve. Verbalisation of their thinking helps them to discern what may be valuable in their thought processes and what may be leading them astray when looking for solutions. Teachers can model efficient thinking techniques when they verbalise their inner speech as they think their way through a problem. By thinking aloud, students learn how to learn.

Let’s go to a primary health class. We need to teach about food plates. It's an opportunity to review vocabulary of food while scaffolding (introducing new concepts gradually) what category the different types of food fall into.

Just as before, we take the image and cut it up into strips.

We give each pair of students a set of the strips and each student takes half. One student in each pair puts down one strip, describes what's in it, predicts what information the strip to the right or left might have, and the other student joins in at the appropriate moment.

At the end, they'll have reviewed important vocabulary, reminded each other of words they may have forgotten, focused on how different types of food are grouped together, and will have seen proportions of these categories. You've encouraged them to think aloud and verbalise their thought processes. Now they're ready to understand the topic more fully and see how their thinking aligns with the rest of the information they'll be exposed to in the chapter.

So that's it, that's technique number 6, another type of puzzle, and all of you SUPER TEACHERS out there thanks so much for joining and I hope to see you soon. Please send me any comments at my Linkedin.com page or my Facebook page (GivingaHelpingHandBook) and I look forward to seeing you again soon. Bye!

You can find me at these sites:

https://scaffoldingmagic.com/
and
Pinterest
Instagram
Tiktok (scaffoldingscaffolds)

*Hunt, Morton (1982). *The Universe Within: A new science explores the human mind.* Simon and Schuster.