ASC Workshop Plan (by Lynne C. Martin, Jan. 2018)

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| Theme  | Workshop LEad |  | Date |
| **Dual Coding**  | Lynne Martin  |  |  |

Overview

This workshop explores recommendations found in research surrounding dual coding. Students will engage in the active application of dual coding strategies in order to increase their skills in understanding and retaining new information in RRC courses.

| Workshop Guide |  |
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| Objectives | Participants will be able to:* Identify why dual coding is a foundational study behaviour in any learning environment.
* Demonstrate some basic elements/steps to consciously integrate dual coding into their learning plans.
* Demonstrate specific notetaking techniques based on the principles of dual coding.
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| REsources  | * See [www.rrc.ca/success](http://www.rrc.ca/success) (with direct link to ppt) for slide deck and handouts:

 “Visual Note Taking”* Data projector & laptop (could also have ppt on USB)
* Whiteboard & markers

NOTE: [Possible student responses are in square brackets below.] “Ss”=students; [\*]=allow time for ss responses; write underlined terms on board. |
| **Process** | **Person**  | **Action**  | **Time**  |
| introduce yourself as an academic coach & introduce topic | Workshop lead & students | **Slide 1: Title.** *Introduces topic & elicits students’ prior knowledge.* Briefly describe the academic coaching service we offer.Say something like, “Get the pun? Bet you won’t forget the term dual coding! This slide illustrates the basic principle of dual coding.Ask: “Has anyone has heard this term before. What do you think it might mean?” Field answers [for example, putting an image with words to help you remember the concept]. | 1 min |
| define term | Workshop lead  | **Slide 2**: **What Is Dual Coding?** *Gives brief history of theory* Say something like, “Dual coding is a theory developed in the early 1970s by a Canadian! Allan Paivio said that we take in information in two separate ways– through language and through images. Nowadays, that seems pretty self-evident, but in 1971 it was revolutionary, and we can still learn from it how to make our studying more effective.” | 1 min |
| explain reasonsclick through points on slide 3 to elicit brief ss responses(looks long, but moves quickly) | Workshop lead & students | **Slide 3—Exposure Isn’t Enough***Elicits students’ experience & scaffolds the concept.* Start with blank slide & click as you go. Discuss points briefly as follows in your own words.Allow ss to truly respond to your questions before clicking.* “There are different ways to approach being a student. If you just passively sit there in class, and then go home and try to memorize what you read, how does that work for you?” [\*Not very well.] **[click]**
* Ask: “Does it help to make mental connections with what you already know?” [\*Yes!] **[click].**
* What about if you write or read your notes out loud or copy diagrams from the textbook and your class notes? [You’ll remember even more] **[click].**
* BTW, you need to copy notes by hand, not just photocopy or download them.
* Ask: How do you think you’ll learn the most? [By processing the info both verbally and visually at the same time; by making your own pictures alongside your own words] **[click]**

“So, go ahead and doodle in class, as long as your pictures connect with the words you write in your notes.” Ask: “Do any of you do this already?” “What are some ways you draw the info?” [flow charts, mind maps, cartoons, timelines] “When?” [in class and during study times]. Say something like, “If you don’t want to draw, you can connect the words to your mental pictures, but it’s better if you move your hands in writing or drawing. Connecting words to images, and vice versa, is what Paivio calls making a referential connection, and that’s where the deepest learning happens. Shall we try it?” [\*] | 3 mins |
| show examplesDiscuss slides 4-8 (cont. on next page)(again, looks long, but moves quickly) | Workshop lead & students | *Uses examples to teach principles of referential connection and contiguity.***Slide 4—What colours are these?** Ask: “Why is this so hard to sort out?” Discuss: Your brain processes the info both verbally and visually, but the visual wins out about 90% of the time. That’s why it’s important to have visual information that matches the words you hear.**Slide 5—How about now?** Ask:“Is this better?” [yes] “Why?” [Here both modalities agree, so they reinforce each other.]**Slide 6—Which list is easier to remember?** Elicit ss responses and discuss.Talk about the principle of contiguity—when the visual matches the words, more brain cells are encoding the info without contradicting each other. The black words are non-contiguous: they don’t illustrate the colours they mean. This is a problem with textbooks—too many black words. Ask: “What strategies do you use to solve this problem?”**Slide 7—Visual Thinking Matters** Discuss: Is one side easier to understand than the other? What if you don’t put words to the image on the right? When you write the math symbols, do you say the words in your head? It really does work best to have both pictures and words. **Slide 8—Stop sign** Say something like, “Here’s an easy-to-remember example that follows this principle of contiguity.” Talk about the different visual and language codes operating here—this particular COLOUR AND SHAPE combo has come to mean “stop.” Ask: **“**Do any of you use different coloured pens to write your notes?” [\*] How about symbols? [\*] | 12 mins (cont. next page) |
| exercise 1: words only | Students | **Slide 9—Organize this info using words only**Hand out note paper and let ss try arranging the points on a page however they like, starting with words only. Ask them to show you what they did. Highlight good ss strategies. | 4 mins |
| page organi-zation | Workshop lead & students | **Slide 10—Cornell Notes**Ask if anyone arranges notes this way and discuss the pros and cons, including the use of white space.  |  3 mins |
| exercise 1a: add visuals | Students | Ask how they would combine words and visuals. Have them try it.Again, highlight good ss strategies. | 3 mins |
| Discussion & stretch break | Workshop lead & students | **Slide 11—Solid, Liquid, Gas Diagram** Discuss and compare w/ ss drawings. Ask: “Why did this student write ‘cannot be squashed/ can be squashed’ underneath each diagram?” [defining volume; the word “squashed” evokes a vivid image] **[HAVE EVERYONE STAND UP AND STRETCH.]** | 3 mins |
| warm up— exercise 2: forming mental images from words | Workshop lead & students | **Slide 12—CNS v. PNS (words)****“**Let’s say you need to learn something more complex, like the difference between the Central Nervous System and the Peripheral Nervous System.”Discuss: “What do you picture with the word ‘Central’? What does ‘Peripheral’ mean?” Encourage ss to form mental images. | 1 min |
| exercise 2: stick draw | Students | Tell ss: “Using a stick figure, draw a quick diagram showing these two systems.” Again, highlight good ss strategies. | 3 mins |
| using symbols & legend | Workshop lead & students | **Slide 13—Nerve diagram slide** “I used arrows colour-coded to the drawing to show the the direction of the nerve signals. I could’ve also made the PNS arrows going both ways. What does this still need?” [a legend to show that pink is the CNS, while orange is the PNS]  | 1 min |
| introduce concept of sketch-noting (also called visual note taking) | Workshop lead & students | **Slide 14— Peripheral Neuropathy**What works in this image? [feeling words are right on the place where they happen] Could you do this class? How? [line drawing; trace your own hand; stick figure.] **Slide 15—WWI notes** What do you notice about this page? [unlined; laid out like a flow chart; answers how/why question; uses simple icons or symbols] “This is a technique sometimes called Sketch-noting or visual note-taking. You retell the story/process in little doodles and point form.”  | 2 mins  |
| Give ss handout on sketch-noting | Workshop lead & students | **Slide 16—Sketch-noting**Explain the 3 steps, then flip back to previous slide to point out how these 3 steps were done there. “Here are some online examples and videos showing how to do this. You might want to practice making your set of icons now so once the work gets crazy you’ll already be comfortable with your doodle vocabulary.”Ask: “Do any of you already do something like this? How?” [\*] | 4 mins |
| wrap up & spaced practice | Workshop lead & students | **Slide 17—Lab Fire** “I hope this info on Dual Coding fires you up and gives you some ideas about how to make studying more fun and effective. BTW, can anyone guess why I had you stand up and stretch a few times?” [\*]“It’s another research-based learning strategy called ‘spaced practice’—taking lots of short breaks helps your brain process what it’s taken in before you go on to the next thing. “We’re glad you’re here at Red River College. Come see us at the Academic Success Centre if you’d like more info on study strategies or for help with your course content or assignments. We won’t do the work for you, but we can show you how to do it faster and better.“Any questions?” | 1 min |
| contact info & thank you | Workshop lead | **Slide 18 or 19— Remember: Help Is Available** (Show whichever slide is appropriate for the location of the workshop.) **“**Here’s how to find us. Thanks for your attention—have a good term!” | 1 min |