

Cognitive Psychology in Teaching Organic Chemistry

For this session, we will be using a jigsaw to learn about 7 evidence-based learning strategies (EBLS).

Before the workshop session

Everyone will become an expert on 1 of the EBLS listed in the table below. A pdf of your assigned reading is provided in Moodle. Questions to guide our discussion during the workshop session are provided below. Please read about your assigned EBLS and review the questions prior to the session.

	Names	Reading Assignment
Concrete Examples	Muthukrishna Raja Leslie Knecht Ashley Steelman Lauren Rossi	Weinstein et al. (2018) p. 11-12, Fig. 5
Dual Coding	Grace Ferris Kerry Gilmore Jeremy Klosterman Stefan Cooper	Weinstein et al. (2018) p. 12-13, Fig. 6
Elaboration	Nathan Wymer Chelsea Martinez Omar Villanueva Laura Wysocki	Weinstein et al. (2018) p. 10-11, Fig. 4
Interleaving	Sarah Goh Hasina Saraha Sheri Strickland Isabel Larraza	Weinstein et al. (2018) p. 7-8, Fig. 2
Metacognitive Reflection	Charlie Abrams Nate Brown Latorya Hicks Amanda Henry	Tanner (2012) p. 1-2, Table 1
Retrieval Practice	Matt Donahue Kimberly Fields Bee Kelley Daniel Collins	Weinstein et al. (2018) p. 2-7, Fig. 7
Spaced Practice	Catherine Serrano Lugo Gretchen Stanton Gidget Tay Lauren Mitchell	Weinstein et al. (2018) p. 8-10, Fig. 3

During the workshop session**Brief Introduction + Discussion**

Round 1 Discussion: Expert Teams (approximately 15 minutes) – You will meet with other experts who read about the same EBLs as you. You will meet with participants who read about different EBLs. You will be provided with questions to scaffold your discussion and be able to make notes on your discussion. Your group will be asked to share out a discussion point.

1. What EBLs did you read about? Describe the strategy.
2. Prior to your pre-work, had you ever heard of this EBLs?
 - a) If yes, where did you learn about the EBLs? Have you ever used it in your classroom? Have you ever recommended it to students?
3. How difficult or easy would it be to incorporate this EBLs into your teaching/classroom?
4. What lingering thoughts (questions, concerns, etc.) do you have about your group's EBLs?

Round 2 Discussion: Jigsaw Team (approximately 30 minutes) – You will meet with participants who read about a different EBLs. You will be provided with the following questions to scaffold your discussion and be able to make notes on your discussion. Your group will be asked to share out one discussion point with the larger group.

1. Each person should describe the EBLs they read about.
2. Which EBLs are you most interested in using in your own classroom? How might you implement them?
3. What are some challenges you see about incorporating one (or any) of the EBLs into your classroom? How might you overcome these challenges?
4. Would you recommend any of the EBLs to your students? If yes, which ones and why? If no, why not?
5. What burning questions emerged from your group's discussion? Feel free to add them to the last row in the table below.

Group 1	Group 2	Group 3	Group 4
Muthukrishna Raja Grace Ferris Nathan Wymer Sarah Goh Charlie Abrams Matt Donahue Catherine Serrano Lugo	Leslie Knecht Kerry Gilmore Chelsea Martinez Hasina Saraha Nate Brown Kimberly Fields Gretchen Stanton	Ashley Steelman Jeremy Klosterman Omar Villanueva Sheri Strickland Latorya Hicks Bee Kelley Gidget Tay	Lauren Rossi Stefan Cooper Laura Wysocki Isabel Larraza Amanda Henry Daniel Collins Lauren Mitchell

Real-life Examples + Lingering Questions. We will step through each of the seven EBLs and I will provide examples of ways I have used them in my own classroom. There will be time at the end for any lingering questions!

After the workshop session

In this session, we discussed seven EBLs. Here is a brief description of each EBLs:

- *Concrete examples* - giving specific examples of concepts
- *Dual coding* - providing words and visuals to illustrate a concept
- *Elaboration* - adding new information to existing knowledge
- *Interleaving* - presenting different kinds of problems in an intermixed order
- *Metacognitive reflection* - planning, monitoring, and evaluating of learning
- *Retrieval practice* - bringing information from memory to mind
- *Spaced practice* - spreading out the study of information across multiple sessions

Pick **one** of the EBLs learned about in this session. For that EBLs, develop an activity to use in your classroom in the upcoming semester. Be sure to (1) specify which EBLs you plan to use, (2) describe the activity, and (3) discuss how you will implement it in your classroom. A link to Google Forms to upload your document is available in Moodle.