Metacognitive Skills

Seeking Cohesion and Coherence

Secondary

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SEEKING COHESION AND COHERENCE

When students are creating something with a number of interacting parts, this skill helps them monitor the relationships between what they are currently doing and the overall intent of the project in which they are engaged.

Introduce the skill of seeking cohesion and coherence using the video lesson or an introduction of your own design that covers the same content. The text of the recording is below:

Video script --Have you ever been working on a big project with lots of interacting parts, and you suddenly realized that the parts didn't quite fit together? Maybe one slide in your presentation didn't match your main idea, or a paragraph in your paper didn't support your thesis. Maybe one part of your clay sculpture was too large and didn't fit with the rest of the piece. Or maybe your data chart in a science lab included extra information, so your results didn't make sense. Moments like these can feel confusing or frustrating, but they're also opportunities to pause and reflect on how all the pieces of a project relate. This is when seeking cohesion and coherence really matters.

You use the skill of seeking cohesion and coherence when you are creating something with a lot of interacting parts, like when you're writing, cooking, or building something. This skill helps you pay attention to how well the parts fit together to create a clear, unified whole with no missing or extra parts.

Here's a strategy that will help you as you're seeking cohesion and coherence:

1. Ask yourself whether this is a situation where you need to make sure all the pieces of something work together.
1. If yes, identify which piece you are working on right now.
2. Determine how well that piece fits with the ones you've already developed.
3. Make any necessary changes in the new or old pieces to make them all fit.
4. When you are done, check to make sure your project has a clear focus.

Here is an example of someone using this strategy. Jace's science project was to see whether plants grow differently under natural sunlight or under grow lights. After collecting his measurements, he creates a data chart to add to his lab report. He reads over his lab report before turning it in and notices some extra information in the data chart. He realizes that he accidentally added the time of day he watered the plants. He stops and asks himself, "Does this fit with my overall hypothesis?" Jace removes the unnecessary information and adjusts the chart to clearly support his results. Then, he thinks about whether he should adjust any other sections of his report now that he's removed the time of day he watered. He decides he needs to remove the information from his results and conclusion sections. When he's finished, he looks over the whole report again to make sure it has a clear focus and that all the parts work together.

Seeking cohesion and coherence is a useful skill to use outside of school as well. For example, Kiah is building a clay sculpture of a curled-up lizard. Most of the body is made of detailed body parts that curve together, but as she works, she notices that one of the legs is less precise compared to the rest of the design. It is too pointy and missing toes. She knows that this piece doesn't fit with the rest of the features she's already developed, so she reshapes the leg so it matches the whole design. Now Kiah's whole sculpture looks like one connected, cohesive piece.

Whether you're in school or not, seeking cohesion and coherence helps you make sure the parts of your work connect and support your overall purpose. As you practice this skill, you'll get better at noticing when something feels out of place, making thoughtful adjustments so your ideas flow logically, and checking that your final product creates the effect you intended. Over time, you'll feel more confident organizing your thinking and creating work that feels complete and unified.

Once students have been introduced to the skill of seeking cohesion and coherence, emphasize the following points with them:

- Seeking cohesion and coherence means noticing whether all parts of a project fit together and support a clear, unified purpose rather than feeling disconnected, extra, or incomplete. Discuss with students using prompts like, "What does it look like when all the parts of something work well together?"
- This skill is especially useful in tasks with many interacting parts, such as writing, presentations, cooking, lab reports, art projects, or building something. Discuss with students using prompts like, "What kinds of projects have you done where it was important for the pieces to fit together?"
- Feeling that something is "off," confusing, or not quite right can be a signal that cohesion or coherence needs attention. Discuss with students using prompts like, "What thoughts or feelings tell you that part of your work doesn't fit?"
- An important part of this skill is recognizing when a situation calls for checking how parts relate to the whole rather than focusing on one piece in isolation. Discuss with students using prompts like, "How do you know when it's time to step back and look at the whole project?"
- Seeking cohesion and coherence involves identifying the specific piece you are working on and thinking about how it connects to what you've already created. Discuss with students using prompts like, "How does the part you're working on right now connect to your main idea or goal?"
- Monitoring how well a new or revised piece fits with existing parts helps prevent missing or unnecessary information. Discuss with students using prompts like, "Does this part add something important, or does it distract from the main focus?"
- Making adjustments to either new pieces or earlier work is often necessary to create a unified whole. Discuss with students using prompts like, "What might you need to change so all the parts work better together?"
- Checking the entire product at the end helps ensure that everything supports a clear focus and intended effect. Discuss with students using prompts like, "When you look at the finished work, does everything point toward the same purpose?"
- Reflecting on cohesion and coherence helps you understand how organization and fit affect clarity and quality. Discuss with students using prompts like, "What did Jace realize when he noticed extra information in his data chart, and how did adjusting it improve his report?" or "How did Kiah know the leg on her sculpture didn't fit, and what did changing it do for the overall design?"

LEVELS OF COMPETENCE

There are specific levels of competence for this skill against which students can be evaluated (see **Table 1**). It is important to note that the levels of competence are articulated as a scale that can be used to make judgments about students' status and growth. That scale has score values that range from 0.0 to 4.0. At the 0.0 level, the student cannot demonstrate any part of the skill even with help. At the 1.0 level, the student can perform some of the foundational aspects of the skill with help but not independently. At the 2.0 level, the student can independently demonstrate the foundational aspects of the skill but not the behaviors described at the 3.0 level. The 3.0 level on the scale represents proficiency in the skill. When students can independently demonstrate these behaviors, they have reached the desired status for the skill. At the 4.0 level, the student demonstrates everything at the 3.0 level AND goes above and beyond expectations by adding useful adaptations to the skill. Finally, the scale describes half-point scores that indicate partial progress toward the next level of the scale.

Periodically evaluate students' status relative to these levels of competence using the assessment activities in **Table 4**.

It is also important to note that **Table 2** and **Table 3** contain versions of the scale that can be used by students to rate themselves. These scales are both stated in an "I CAN" format. Periodically, students evaluate themselves relative to the levels of competence using the Full-point or the Half-point self-evaluation scales.

Table 1: Levels of Competence

4.0	The student can articulate specific situations (in school and outside of school) in which they should seek cohesion and coherence, set goals to do so, and evaluate progress.
3.5	In addition to score 3.0 performance, partial success at score 4.0 content.
3.0	The student will recognize when they are not seeking cohesion and coherence and respond by executing a complex strategy involving self-analysis.
2.5	No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content.
2.0	The student will recognize or recall vocabulary associated with self-analysis as it relates to seeking cohesion and coherence (for example, *adjustment, monitor, proactive*) and perform basic processes such as: ● Describe a complex strategy involving self-analysis for seeking cohesion and coherence (articulated by the class or the teacher in the form of a standard operating procedure [SOP]). For example: 　● Ask yourself whether this is a situation where you need to make sure all the pieces of something work together. 　● If yes, identify which piece you are working on right now. 　● Determine how well that piece fits with the ones you've already developed. 　● Make any necessary changes in the new or old pieces to make them all fit. 　● When you are done, check to make sure your project has a clear focus. ● Understand what an individual might think and feel while seeking cohesion and coherence. For example, thinking "Are there any missing or extraneous parts?" or "Is this the overall effect I envisioned?"
1.5	Partial success at score 2.0 content, and major errors or omissions regarding score 3.0 content.
1.0	With help, partial success at score 2.0 content and score 3.0 content.
0.5	With help, partial success at score 2.0 content but not at score 3.0 content.

0.0	Even with help, the student demonstrates no success.

Table 2: I CAN Student Assessment Form (Half-point scale)

4.0	I can articulate specific situations (in school and out of school) in which I should stay focused when answers and solutions are not immediately apparent, set goals to do so, and evaluate my progress.
3.5	In addition to score 3.0, I can do some of what is required at the score 4.0 level.
3.0	I can recognize when I am not staying focused when answers and solutions are not immediately apparent and respond by executing a complex strategy involving self-analysis.
2.5	In addition to score 2.0, I can do some of what is required at the score 3.0 level.

2.0	I can recognize or recall vocabulary associated with self-analysis as it relates to seeking cohesion and coherence (for example, *adjustment, monitor, proactive*) and perform basic processes such as:
	● Describe a complex strategy involving self-analysis for seeking cohesion and coherence (articulated by the class or the teacher in the form of a standard operating procedure [SOP]). For example:
	  ● Ask yourself whether this is a situation where you need to make sure all the pieces of something work together.
	  ● If yes, identify which piece you are working on right now.
	  ● Determine how well that piece fits with the ones you've already developed.
	  ● Make any necessary changes in the new or old pieces to make them all fit.
	  ● When you are done, check to make sure your project has a clear focus.
	● Understand what an individual might think and feel while seeking cohesion and coherence. For example, thinking "Are there any missing or extraneous parts?" or "Is this the overall effect I envisioned?"

1.5	On my own, I can do some of the things at score 2.0 level.

1.0	With help, I can do some of the things at score 2.0 level and 3.0 level.
0.5	With help, I can do some of the score 2.0 level things but not the score 3.0 level things.
0.0	Even with help, I cannot do any of the score levels.

Table 3: I CAN Student Assessment Form (Full-point scale)

4.0	I can articulate specific situations (in school and out of school) in which I should seek cohesion and coherence, set goals to do so, and evaluate my progress.
3.0	I can recognize when I am not seeking cohesion and coherence and respond by executing a complex strategy involving self-analysis.
2.0	I can recognize or recall vocabulary associated with self-analysis as it relates to seeking cohesion and coherence (for example, *adjustment, monitor, proactive*) and perform basic processes such as: ● Describe a complex strategy involving self-analysis for seeking cohesion and coherence (articulated by the class or the teacher in the form of a standard operating procedure [SOP]). For example: ● Ask yourself whether this is a situation where you need to make sure all the pieces of something work together. ● If yes, identify which piece you are working on right now. ● Determine how well that piece fits with the ones you've already developed. ● Make any necessary changes in the new or old pieces to make them all fit. ● When you are done, check to make sure your project has a clear focus. ● Understand what an individual might think and feel while seeking cohesion and coherence. For example, thinking "Are there any missing or extraneous parts?" or "Is this the overall effect I envisioned?" "Let me try that again" or "Maybe there's a different way to do this").
1.0	With help, I can do some of the things at score 2.0 level and score 3.0 level.
0.0	Even with help, I cannot do any of the score levels.

4.0	Ask students to document specific situations in and out of school when they've used the skill of seeking cohesion and coherence. They should be able to describe the goals they set for themselves, what they did, and how well they performed.
3.0	Have students document a time they used the skill of seeking cohesion and coherence. They should be able to provide a detailed description of the event and a critique of their own behavior.
2.0	Ask students to explain the following terms: *adjustment, monitor, proactive.* Their answers should be generally accurate but not necessarily detailed or complete. Ask students to describe a basic process that has been provided to them for seeking cohesion and coherence. Their descriptions should include explicit steps such as: - Ask yourself whether this is a situation where you need to make sure all the pieces of something work together. - If yes, identify which piece you are working on right now. - Determine how well that piece fits with the ones you've already developed. - Make any necessary changes in the new or old pieces to make them all fit. - When you are done, check to make sure your project has a clear focus. Ask students to describe some of the self-talk and thinking that should occur when someone is seeking cohesion and coherence. Their answers should include things like thinking, "Are there any missing or extra parts?" or "Is this the overall effect I envisioned?"