Notes on Visible Thinking Routines

Generate-Sort-Connect-Elaborate: Concept Maps

Select a topic, concept, or issue for which you want to map your understanding.

Generate a list of ideas and initial thoughts that come to mind when you think about this topic or issue.
Sort your ideas according to how central or tangential they are. Place central ideas near the center and more tangential ideas toward the outside of the page.
Connect your ideas by drawing connecting lines between the ideas that have something in common. Explain and write on the line in a short sentence how the ideas are connected.
Elaborate on any of the ideas or thoughts you have written so far by adding new ideas that expand, extend, or add to your initial ideas.

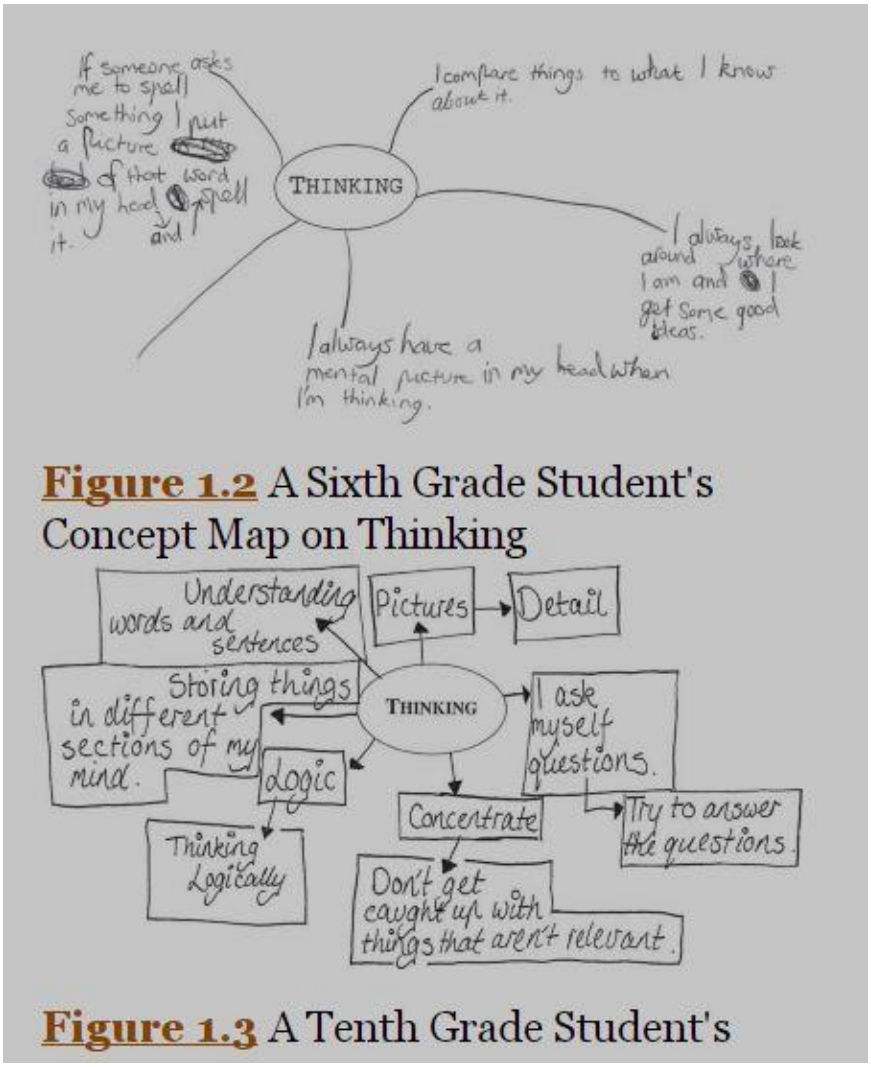

Figure 1.2 A Sixth Grade Student's Concept Map on Thinking

Figure 1.3 A Tenth Grade Student's

Examples: p.18

Source: Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (p. 125). Wiley. Kindle Edition.

Steps

1. Set up. Check whether students know what a concept map is, and if not, explain that this is a way of showing one's thinking about a topic. If learners are already familiar with concept maps, the routine can be introduced with a brief introduction explaining that they will be creating concept maps in a structured way.

2. Generate. Ask students to generate a list of words, ideas, or aspects associated with the topic. Depending on the topic, this might mean you ask students to “make a list of key aspects or components of this topic” or “make a list of the various ingredients, processes, or needs associated with this goal/ task.” This step is designed to produce an initial list of ideas. Since it can be added to at any time, it is only important that students have a list of at least five or six items to use before beginning the next step.

3. Sort. Invite learners to sort their ideas according to how central or tangential they are, placing central ideas near the center and more peripheral ideas toward the outside. If desired, at this stage students can pair or form groups to do this sorting. This often results in rich debating of priorities.

4. Connect. Ask learners to connect their ideas by drawing lines between ideas that share a connection and to briefly explain this connection by writing it out on the line. For example, one idea might lead to another or two ideas might work in tandem.

5. Elaborate. Ask students to pick a few central ideas and elaborate upon them, creating subcategories that break the ideas into smaller parts.

6. Share the thinking. Have students pair up with another individual or group to share their concept maps. Focus discussion on the choices made in constructing the map and when there were debates or questions about placement or connections.

Source: Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (pp. 126-127). Wiley. Kindle Edition.

Headlines

Think of the big ideas and important themes in what you have been learning.

Write a headline for this topic or issue that summarizes and captures a key aspect that you feel is significant and important.

Examples: “Do the Numbers Stop”, “Doubling and Thinking Ahead, Way Way Ahead”, “Exponential Growth: In Real Life, Out of the book, affects our small world afterall.” (p. 115)

Steps

1. Set up. After students have had some learning experiences, ask them to consider what they think some of the core ideas in what they've been learning seem to be.
2. Write a headline. Ask the students to “Write a headline for this topic or issue that captures an important aspect or core idea that we would want to remember.” Students can do this individually or with partners, depending on what the teacher desires.
3. Share the thinking. Once students have an opportunity to draft a headline, ask them to share their headlines with students around them. It is important that students not only share their headlines but also the story and reasoning behind their choice, unpacking the headline for others. This step is not a competition for the best headline. The goal is to create a forum in which different perspectives and nuances are surfaced.
4. Invite further sharing. Once pairs or small groups have had the opportunity to share their headlines and tell the stories of their headlines with each other, you can create a class collection of the headlines that document the group's thinking. Working with a collection of headlines, you might encourage your class to search for common themes or elements among the headlines.

Source: Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (p. 111-112). Wiley. Kindle Edition.

Think-Pair-Share

Steps

1. Set up. Explain to students that this is a routine in which each student will think about the topic. They can write or draw out their ideas and/or after sharing. Two students will form a pair. There will be 2 minutes of quiet thinking. Nobody should speak. Each student will be given 2 minutes to share. The other listen and take note but will not respond. After the 2 minutes, the previous listener will share and the other will listen. The listener will have to report back.

2. Allow 2 minutes of quiet thinking time. Using a timer in class can be useful. Ensure quiet surrounding.

3. When the 2 minutes is up. Allow 2 minutes for the first sharing. Remind students of their roles.

4. When the 2 minutes is up, ask them to swish role. Allow 2 minutes to share.

5. Ask students whether or not anyone will like to report back to the class. List and group some themes for discussions. Can follow up with “What make you said that?” for elaboration and supporting an idea with evidence.

Ming: Based on my understanding.

See-Think-Wonder

Looking at an image or object:

What do you see?

What do you think is going on?

What does it make you wonder?

Source: Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (p. 55). Wiley. Kindle Edition.

Steps

1. Set up. Present the chosen image in a way that allows students to see the image/ object in as much detail as possible: projecting it on a screen in a darkened room, having a large printed copy that the whole class can see when seated together, or multiple copies that pairs can look at. Allow sufficient silent time for close observation, 2 or 3 minutes, before any talk or discussion.

2. See. Ask learners to state what they noticed. Emphasize that you are not looking for interpretations at this stage, only what they observe. A useful prompt is to tell students that an observation is something you could actually put your fingers on within the image/ object. One method of debriefing the “I see's” is to have students do a Think-Pair-Share. Then the class discussion might start with sharing those things your partner noticed that you hadn't.

3. Think. Ask learners what they think is going on in the image/ object. This general, interpretive question may be modified to suit the image/ object. For instance, you might ask, “Based on what we are seeing and noticing, what does it make us think? What kinds of interpretations can we form based on our observations?” The goal here is to build up layers of tentative interpretation rather than merely naming the subject matter. Push students for alternatives and additions: “What else is going on here?” It is often effective to respond to students' responses with “What do you see that makes you say that?” This encourages learners to provide supporting evidence. In time, this develops more considered responses, helping move students away from guessing or unsubstantiated opinions.

4. Wonder. Ask learners what they are now wondering about based on what they have seen and have been thinking. Initially, students may find it hard to separate “thinking” from “wondering.” For instance, they may wonder whether their interpretations are correct: “I wonder if she really is his sister.” Or their initial “thinks” may be framed as tentative and conditional wonderings: “I wonder if that object in the corner is a boat?” To help address this confusion, you might suggest that wondering is about asking broader questions that push us beyond our interpretations to look at issues and ideas raised by the image/ object.

5. Share the thinking. In this routine, students are generally sharing their thinking at each step along the way before moving on to the next one. This allows the class to build on the group's thinking at the previous stage and often results in richer discussions than might be had alone. It can be very useful to document the thinking at each stage as it happens, though it is not always necessary. If the use of STW is to generate interest in a topic and raise questions, then wonderings can be written down and posted

around the room to encourage ongoing consideration, and students can be encouraged to add to the wonderings over time as new ideas occur.

Source: Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (pp. 56-57). Wiley. Kindle Edition.

I Used to Think…Now I Think…

Reflect on your current understanding of this topic, and respond to each of these sentence stems:

I used to think… Now I think…

Source: Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (p. 154). Wiley. Kindle Edition.

Ming: I think it will be good to modify the above routine slightly to
I used to think…
Now I think…
In future, I will do … about [subject]
the idea of the last question is to connect with action.

Steps

1. Set up. Explain to students that the purpose of this routine is to help them reflect on their thinking about the topic and to identify how their ideas have developed over time. It may be useful for students to have their journals on hand, class documentation available, and/ or access to their learning portfolios where collections of their recent work reside.

2. Encourage individual reflection. Say to the students, “When we began this study, you all had some initial ideas about it and what it was all about. Take a minute to think back to when we started and remember what kind of ideas you once held. Write what it is that you used to think about our topic, starting off with the words, ‘I used to think…’ ” Once students have had a chance to write their responses, say, “Now, I want you to think about how your ideas about our topic have changed as a result of what we've been studying, doing, and discussing in class. Write a few lines to capture where you arenow in your thinking, starting with the phrase, ‘Now, I think…’ ”

3. Share the thinking. Have students share and explain their shifts in thinking. Initially it may be worthwhile to do this as a whole group so that you can probe students' thinking and push them to explain. This also provides a model for students who are having difficulty. Once students become accustomed to explaining their thinking, you could have them share in small groups or pairs before soliciting a whole-group response.

Source: Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (p. 155). Wiley. Kindle Edition.

Connect-Extend-Challenge

Consider what you have just read, seen, or heard, then ask yourself:

- How are the ideas and information presented connected to what you already knew?
- What new ideas did you get that extended or broadened your thinking in new directions?
- What challenges or puzzles have come up in your mind from the ideas and information presented?

Steps

1. Set up. Before students begin listening to a story, reading a passage, viewing a video, visiting an exhibit, or participating in another information-rich activity, invite them to be mindful of how this new learning experience connects to what they already know. Ask them to think about how it pushes their thinking into new directions and to be aware of new challenges and puzzles that may surface as a result of what they hear, read, watch, or experience.

2. Connect. After the activity, have students take note of how what they've just experienced connects with ideas they have already explored or thought about. Ask, “How do the ideas and information you've just heard connect to ideas you already thought about or knew?” It is important to allow students time to write their connections individually before having any group discussion.

3. Extend. Now prompt students to identify how their ideas have broadened, deepened, or expanded in some way as a result of the new learning experience. Ask, “How has your thinking been extended in some way, taking it in new or further or deeper directions?” Again, have students individually record their responses.

4. Challenge. Finally, ask students to consider ideas that seem significantly challenging in the topic. “What challenges or puzzles have come up in your mind about this topic now that you've been presented with these new ideas and information?” These might be questions or issues that emerge.

5. Share the thinking. Once students have a chance to individually respond to the CEC prompts, have them share their thoughts with partners or in small groups. When sharing, it is important that students give their reasons or thoughts behind why they made their selections. A group could have this conversation in three parts so that each part of the routine is given due attention. Also, collecting the connections, extensions, and challenges from small groups to display on chart paper is a good way of making the whole class's new thinking more visible.

Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (pp. 132-134). Wiley. Kindle Edition.

Claim-Support-Question

- Drawing on your investigation, experience, prior knowledge, or reading:
- Make a claim about the topic, issue, or idea being explored. A claim is an explanation or interpretation of some aspect of what is being examined.
- Identify support for your claim. What things do you see, feel, or know that lend evidence to your claim? Raise a question related to your claim. What may make you doubt the claim? What seems left hanging? What isn't fully explained? What further ideas or issues does your claim raise?

Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (p. 191). Wiley. Kindle Edition.

Steps

1. Set up. The idea of a claim needs to be introduced to the class. The word claim was chosen for this routine because it encompasses a lot: conjectures, speculations, generalizations, assertions, statements of fact, theories, hypotheses, and so on. A very loose definition could be, A claim is a statement about "what's going on here." Present the situation to be examined to the class and tell students the group's goal is to figure out "What's going on here?" At the end of the lesson, the class will have a better understanding of the truth and reality of this situation.

2. Identify claims. Prior to launching a topic, a teacher might ask her students, "What claims, explanations, or interpretations might you have already about this topic?" Or, after a class has spent some time on a topic, a teacher could invite his class to make or locate claims by asking "Now that we've been studying this topic for some time, what claims can you come up with that offer us an explanation or an interpretation of our topic?" However they are generated, claims should be documented for the entire class to see, leaving room to add more thinking at a later time or in subsequent lessons. Some teachers like to write the claims in the center of the page or board, adding supports on one side and questions on the other.

3. Identify support. Ask students, "Now that we have these claims to consider, what can we see, notice, know, or find that might give support to them?" Students might be encouraged to seek out this support through additional experimentation, research, or fact finding in some instances or to draw on previous knowledge in other cases. Have students articulate the supporting evidence for each claim. This should be written near the original claims for all to see and collectively consider. This step is really about asking students to consider the reasons why anyone might stand behind a given claim.

4. Raise questions. In this step, a teacher asks students to be healthy skeptics of the claims being examined. Invite students to think beyond the support already offered for the claims and consider what might make one hesitant about the truth or accuracy of a claim. One way of asking this is, "Now that we've given some support for these claims, is there evidence on the other side? What questions do we

need to raise about these claims in order to truly examine their credibility? What more might we need to examine or explain?”

5. Share the thinking. Documenting the routine as it evolves makes students' thinking visible throughout the process and allows students to build on as well as challenge others' thinking. Having fully examined a set of claims, it would be appropriate to ask students to take a stance toward them. You might have students rank the claims on a line of confidence, from “still questioning” to “definitely believe.” If CSQ has been used to explore a particular issue, students can be asked to give their positions regarding the issue.

Ritchhart, Ron; Church, Mark; Morrison, Karin (2011-03-25). Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners (p. 191-193). Wiley. Kindle Edition.