

## Focus on

# VISIBLE THINKING

## 1. What is it?

Visible Thinking is an approach that helps learners to develop clear thinking patterns. The aim of Visible Thinking is to foster richer discussion, more purposeful thinking, and deeper understanding in any learning situation. Students make thinking visible by, for example, showing how they approach a problem or how they capture the essence of an idea presented in a text. Looking at various sides of an issue can help learners to consider different perspectives, while skills such as predicting, summarizing, and sharing ideas can help them develop more complex language.

### Thinking Routines

At the heart of Visible Thinking is the use of a pedagogical tool called a Thinking Routine. Dozens of Thinking Routines have been developed or adapted by the Project Zero research group at the Harvard Graduate School of Education. Each routine focuses on a specific kind of thinking, with emphasis on generating, comparing, and contrasting ideas. With frequent use of a Thinking Routine, students will sharpen their awareness of opportunities to use that particular process of thinking.

What makes Thinking Routines especially useful to teachers (and students) is the deliberate placement of thinking at the heart of learning. The routine steps are easy to remember, and when teachers use a Thinking Routine over and over again, with different content, students will internalize the thinking pattern and will be able to apply it in a variety of contexts. Consider a student who has difficulty coming up with ideas to write about when given a writing assignment. A Thinking Routine for brainstorming, organizing, and connecting ideas can give that student a valuable tool to use across subject areas.

### Thinking Routines can bring the following benefits:

- They can provide students with tools for using language in authentic and spontaneous ways, and enable them to structure and reveal their thinking.
- Students increase their confidence as they are scaffolded toward more sophisticated language use and a more open-ended exploration of ideas.
- They build vocabulary and syntactical structures which students can adapt to various situations.
- They help to establish a positive learning environment where students collaborate and consider other students' viewpoints.
- Students are encouraged to think creatively and critically.

### ABOUT THE AUTHOR

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### A Thinking Routine example

The Thinking Routine *See–Think–Wonder* practises the thinking skills of describing, interpreting, and asking questions. It works best with a compelling image showing somewhat ambiguous or complex content. The teacher presents the image, invites students to observe closely, and then asks a series of three questions, pausing after each question to allow everyone to develop and share their responses: *What do you see or notice? What do you think about that? What are you wondering?*

#### See–Think–Wonder

A teacher shows her class of 15-year-olds a copy of Picasso's *Guernica*.

#### What do you see or notice?

Students describe the physical characteristics of the painting, e.g. in Picasso's *Guernica* we can see distorted figures of people and animals.

#### What do you think about that?

Students describe what the painting reminds them of and how it makes them feel, e.g. *the people look worried and sad; the painting makes me feel sad because the people's faces are serious*. Asking questions like 'What makes you say that?' is a good way to help students learn to support their ideas with evidence.

#### What are you wondering?

Students describe questions prompted by the painting, e.g. *I wonder why the colours in the painting are all grey, why the figures are distorted, why the painting is so big, etc.*

## 2. What does it mean for the ELT classroom?

### Supporting students

There are two important points to keep in mind when using a Thinking Routine like *See–Think–Wonder*. First, the routine is meant to be used frequently, as noted above. Second, it should fit into the context of the topic being explored so that it helps students tie ideas together and build a more comprehensive understanding of that topic. Thinking Routines should be used with a clear purpose.

Depending on their level of English, students could benefit from having a vocabulary bank before starting an activity, listing words they might want to use. The teacher could also provide sentence starters for each step of a routine (e.g. 'I see...' or 'I notice that...' or 'I wonder if...').

### Making thinking visible

When using Thinking Routines, documenting the learning process is important. Teachers should encourage students to get used to writing down their own ideas. Keeping a record of ideas helps to showcase the variety of students' thoughts as well as validating their thinking. It also contributes to students' development of vocabulary and syntax. The documentation of students' ideas can become a reference point in later lessons or a building block in new or different explorations of a topic.

### Creating a positive learning environment

Thinking Routines give teachers and students an opportunity to think and formulate new ideas. They help to create a more inclusive classroom where students can take the time to think and write down thoughts and find connections with ideas shared by other students. This is particularly helpful in mixed-ability classes, as routines allow students to participate at their level; for example, more confident students can model language for less confident students. All students are invited to contribute in a non-competitive way: students with a creative flare can generate original ideas, students who tend to think more logically can help organize those ideas, and students with a good range of vocabulary and grammar can help to communicate ideas clearly. Everyone has a chance to participate and contribute.

### Teaching routines

Using Thinking Routines does not require extensive teacher training. Teachers can adopt routines they feel comfortable with and progressively add new ones. In many cases, teachers might already be following similar steps in their lessons, and Thinking Routines would require minimal adaptation to the way they already teach.

## 3. What are the challenges?

### Expectations for students with limited language

Teachers of students with a lower level of English may think that, if learners have not yet mastered the necessary language, they cannot engage with Thinking Routines. However, all students should be given the opportunity to share their ideas, even when they are more complex than they can express. If students' level of English is limited, encourage them to initially share their thoughts in their first language.

### Using Thinking Routines merely as activities

Another challenge teachers sometimes face is the tendency to use Thinking Routines as one-off activities, forgetting that they are meant to be used regularly. Just as we have routines for getting ready for school or tidying things up, we should consider Thinking Routines as part of the infrastructure for learning in the classroom.

### Matching Thinking Routines to the intended thinking skills

Teachers need to think carefully about the kind of thinking skills they want their students to develop and then match the Thinking Routine to the task. A mismatch between the Thinking Routine and the particular learning goal can cause the routine to backfire and create confusion. Avoid piling on Thinking Routines; instead, choose a handful that you want to become embedded in the culture of the classroom. The matrix in the Appendix can guide teachers to match Thinking Routines to the kind of thinking they want to emphasize.

## 4. How can this be implemented?

Try out a Thinking Routine and notice what happens with students' level of engagement, their desire to use the target language, and the quality of language used. *See-Think-Wonder* is a good choice. Other Thinking Routines particularly suited to the language classroom are described below.

### Headlines

Headlines aims to build the thinking skills of summarizing and capturing the heart of something. It can be used after exploring a topic, watching a film, or reading a passage together, for instance. Students are asked to provide a quick summary of the big idea or to say what stands out in their mind. They can be directed to think about how headlines work in a newspaper or magazine in that the headline writer tries to capture concisely the essence of an article's message.

### Chalk Talk

This routine is about encouraging all voices to be 'heard' in a classroom. *Chalk Talk* involves a silent dialogue among students. The teacher poses different open-ended questions, each written on chart paper or a whiteboard. Students write down their answers to the questions and read each other's answers, in silence. In this way, students compare answers and connect ideas. Quiet students or those who might take a little longer to formulate responses appreciate the calming nature of *Chalk Talk* (there should be no talking). Students can return to their responses or others' if they want to change or add to them.

### Looking: 10x2

When seeing an image or reading a text for the first time, the Thinking Routine *Looking: 10x2* can slow down students' process of interpretation and help them to consider details more carefully. Imagine looking at a painting of a futuristic world. The teacher asks learners to take 30 seconds to list the ten things they see in the image. Students can pair up and compare lists, adding to their original list. Then, they return to the image and add ten more things they now see. In addition to developing vocabulary, the routine aims to move students beyond first impressions and consider more complex aspects of the image. It can prove valuable before a writing activity with its focus on developing descriptive language. It can also be adapted to *Listening: 10x2* when working on oral comprehension skills.

### Think-Pair-Share

When students are reluctant to make mistakes or are particularly timid about sharing their ideas with the class, you could use a Thinking Routine such as *Think-Pair-Share* (alongside another routine, if relevant). Students are asked to think individually about a topic and write down all the ideas that come to mind. They then pair up with another student to compare their thoughts. Finally, they can share key ideas with the class. This routine is especially helpful in the language classroom because it gives students the opportunity to practise writing or speaking and also receive feedback from a peer in a low-risk setting, before sharing with the larger group.

### Connect-Extend-Challenge

This Thinking Routine supports students in making connections, identifying new ideas that emerge, and raising questions about a topic. After reading a text or encountering new information in a video, students are asked the following questions: *How does this information connect to what I already know? How does this information extend my thinking about the topic? What is challenging for me?* The last question is intended to raise new questions about the topic and can be the starting point for further exploration.

### Name-Describe-Act

The Thinking Routine *Name-Describe-Act* is a creative way to work on fluency with parts of speech such as nouns, adjectives, and verbs. This routine works well with an image, a video clip, or an event, either for examining closely or analysing. After instructing students to consider it for a few minutes, ask them to recall parts or features from memory. The words they provide will be nouns. Next, ask them to add a descriptor to each of those things. These will be adjectives. Finally, for everything named, ask them to say how they act. What are they doing? What is their function? What are they contributing to the whole? The responses will be verbs or verbal phrases. In addition to building language skills, this routine helps develop working memory and can facilitate the skills of close looking and analysis.



## 5. Over to you

Many of the Thinking Routines described here may feel similar to what teachers already do in class. These Thinking Routines provide an opportunity to expand the aims of a lesson by focusing on developing skills that students can use across a range of subjects. Through Thinking Routines, students will learn to articulate the way they think and make deeper connections between ideas. In turn, this will make them feel motivated and encourage them to share more with one another, resulting in a more creative and collaborative classroom.

### Talking points

- Which Thinking Routines help to develop that kind of thinking?
- What challenges might you face in using Thinking Routines with your students?
- What kinds of support might your students need in order to engage with Thinking Routines successfully?
- How would you document students' responses as they go through a Thinking Routine?
- How do Thinking Routines build the skills and knowledge your students will need to master more complex material?
- If you find that Thinking Routines are benefiting your students' language development, how might you initiate a conversation with colleagues about using them across subject areas?

## 6. Further reading

### Three books about Thinking Routines as pedagogical tools

Church, M., Morrison, K., & Ritchhart, R. (2011). *Making thinking visible: How to promote engagement, understanding, and independence for all learners*. San Francisco: Jossey-Bass.

Church, M., & Ritchhart, R. (2020). *The power of making thinking visible: Practices to engage and empower all learners*. San Francisco: Jossey-Bass.

Ritchhart, R. (2015). *Creating cultures of thinking: The 8 forces we must master to truly transform our schools*. San Francisco: Jossey-Bass.

### Learn more about recording student learning

Krechevsky, M., Mardell, B., Rivard, M., & Wilson, D. (2013). *Visible learners: Promoting Reggio-inspired practices in all schools*. San Francisco: Jossey-Bass.

### Visible Thinking (Project Zero)

This ongoing initiative has taken hold in schools, museums, and other learning spaces across the world. A research team led by Dr. Ron Ritchhart at Project Zero has worked alongside a wide variety of educators in an effort to test Visible Thinking strategies across various subject areas and age levels and to learn from the ways teachers have put them to use.

<https://pz.harvard.edu/projects/visible-thinking>

### Thinking Routines

[http://www.visiblethinkingpz.org/VisibleThinking\\_html\\_files/03\\_ThinkingRoutines/03a\\_ThinkingRoutines.html](http://www.visiblethinkingpz.org/VisibleThinking_html_files/03_ThinkingRoutines/03a_ThinkingRoutines.html)

### Resources that can help you begin your journey with Thinking Routines

Making Thinking Visible

[https://pz.harvard.edu/sites/default/files/MakingThinkingVisible\\_DP.pdf](https://pz.harvard.edu/sites/default/files/MakingThinkingVisible_DP.pdf)

Thinking Routines Video

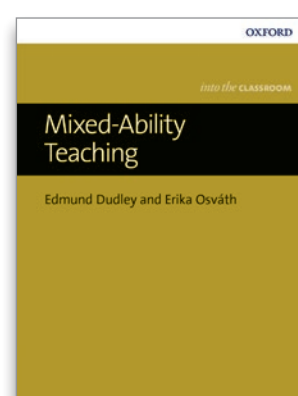
<https://pz.harvard.edu/resources/thinking-routines-video>

10 Ideas to Start Building a Culture of Thinking at Your School

<https://pz.harvard.edu/resources/10-ideas-to-start-building-a-culture-of-thinking-at-your-school>



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# THINKING ROUTINES MATRIX

Routine	Key Thinking Moves	Notes
<b>Routines for INTRODUCING &amp; EXPLORING IDEAS</b>		
See–Think–Wonder	Description, interpretation, and wondering	Good with ambiguous or complex visual stimuli.
Zoom In	Description, inference, and interpretation	Variation of STW using only portions of an image.
Think–Puzzle–Explore	Activating prior knowledge, wondering, planning	Good at the beginning of a unit to direct personal or group inquiry and uncover current understandings as well as misconceptions.
Chalk Talk	Uncovering prior knowledge and ideas, questioning	Open-ended discussion on paper. Ensures all voices are heard; gives thinking time.
3–2–1 Bridge	Activating prior knowledge, questioning, distilling, and making connections through metaphors	Works well when students have prior knowledge, but instruction will move it in a new direction. Can be done over extended time during the course of a unit.
Compass Points	Decision-making and planning, uncovering personal reactions	Solicits the group's ideas and reactions to a proposal, plan, or possible decision.
Explanation Game	Observing details and building explanations	Variation of STW that focuses on identifying parts and explaining them in order to build up an understanding of the whole from its parts and their purposes.
<b>Routines for SYNTHESIZING &amp; ORGANIZING IDEAS</b>		
Headlines	Summarizing, capturing the heart	Quick summaries of the big ideas or what stands out.
CSI: Colour, Symbol, Image	Capturing the heart through metaphors	Non-verbal routine that forces visual connections.
Generate–Sort–Connect–Elaborate: Concept Maps	Uncovering and organizing prior knowledge to identify connections	Highlights the thinking steps of making an effective concept map that both organizes and reveals one's thinking.
Connect–Extend–Challenge	Making connections, identifying new ideas, raising questions	Key synthesis moves for dealing with new information in whatever form it might be presented: books, lecture, film, etc.
The 4 Cs	Making connections, identifying the key concept, raising questions, and considering implications	A text-based routine that helps to identify key points of a complex text for discussion. Demands a rich text or book.
Micro Lab	A protocol for focused discussion	Can be combined with other routines and used to prompt reflection and discussion.
I used to think...	Reflection and metacognition	Used to help learners reflect on how their thinking has shifted and changed over time.
<b>Routines for DIGGING DEEPER INTO IDEAS</b>		
What makes you say that?	Reasoning with evidence	A question that teachers can weave into discussion to push students to give evidence for their assertions.
Circle of Viewpoints	Perspective-taking	Identification of perspectives around an issue or problem.
Step Inside	Perspective-taking	Stepping into a position and talking or writing from that perspective to gain a deeper understanding of it.
Red Light, Yellow Light	Monitoring, identifying bias, raising questions	Used to identify possible errors in reasoning, overreaching by authors, or areas that need to be questioned.
Claim–Support–Question	Identifying generalizations and theories, reasoning with evidence, making counterarguments	Can be used with text or as a basic structure for mathematical and scientific thinking.
Tug of War	Perspective-taking, reasoning, identifying complexities	Identifying and building both sides of an argument or tension/dilemma.
Sentence–Phrase–Word	Summarizing and distilling	Text-based protocol aimed at eliciting what a reader found important or worthwhile. Used with discussion to look at themes and implications.