Transforming Pedagogy with Thinking Routines: Lessons from Our Experiences in Peru and Panama.

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In this article, we explore thinking routines and how they have transformed the pedagogical practice of many teachers in the Spanish-speaking world. We also address some common challenges that can arise in this process and share practical tips for overcoming them. These recommendations are drawn from our own experiences, highlighting both what has worked well and lessons learned from mistakes along the way.

Introduction

After two years of experimenting with Thinking Routines (TRs), Vanessa García, a teacher from Peru, reflected: "*I learned to feel free, to enjoy my classes, not to live waiting for something, but to allow myself to be surprised by the new. Now I enjoy what my students share, as they are more autonomous. They question each other while also offering each other support. They generate their own learning based on their needs.*"

Vanessa García, a teacher from Peru, is observing her students' responses.

We are delighted to hear such reflections, which highlight how TRs not only prevent students from passively receiving information but also spark their interest and actively engage them in their own learning process. This kind of deeper understanding enables students to use knowledge creatively and flexibly across various contexts to solve real-life problems, create products, connect with the world around them, and, ideally, contribute to building a more just and humane society.

Moreover, we have observed the growing popularity of TRs in the Spanish-speaking world. A quick internet search reveals that educators from various countries widely use these routines. However, we have also noticed that they are sometimes implemented without fully harnessing their potential or situating them within a broader educational purpose.

The insights shared in this article come from our work with educators and coaches from Innova Schools, a network of private schools in Peru, as well as with educators from public schools in Panama. These experiences involved collaborations between Project Zero, the research center at Harvard Graduate School of Education where we work, alongside educators from both countries who were motivated to pursue change in their practices and communities. We learned a lot from them and their willingness to reflect on the opportunities and challenges they encountered while incorporating TRs into their pedagogical practices.

In this article, which is intended for those new to TRs as well as experienced educators seeking to use them more effectively, we aim to share some ideas and reflections drawn from this work, focusing in particular on one of the most popular TR See-Think-Wonder. Additionally, we highlight some potential challenges that may arise along the way and offer ideas and suggestions for overcoming them.

What are Thinking Routines?

TRs are tools designed to foster deep thinking among students and educators. They consist of simple structures, such as sets of questions or brief sequences of steps that are easy to learn and can be applied across various levels, subjects, disciplines, and contexts. These routines can be integrated into daily learning practices and used repeatedly over time. For instance, the popular routine "See, Think, Wonder" consists of three steps: 1. What do you see? 2. What do you think about that? 3. What does it make you wonder? This routine enhances students' *observation* and *analysis* skills, promotes *curiosity*, and encourages them to ask *questions* that deepen their understanding.

The primary purpose of these tools is to flexibly guide students' thinking processes while promoting *dispositions* that expand and deepen their understanding. These thinking dispositions encompass the attitudes and habits of mind that foster deep learning. The focus is on developing skills that extend beyond mere knowledge acquisition, promoting ways of thinking that students can apply in various situations. Additionally, they help teachers document learning and make students' thinking visible.

TRs were developed by Project Zero as part of the research initiative "Visible Thinking," led by David Perkins, Shari Tishman, and Ron Ritchhart, over twenty years ago. Researchers at Project Zero have since refined the original routines and developed new ones as part of other research projects.

TRs have been especially fruitful for teaching thinking through art and objects. Museum educators have suggested that discussions about art using TRs not only foster complex thinking but also contribute to social and emotional well-being (see Resources below). These educators have noticed that well-being increases when they take the time to listen to the perspectives, ideas, and questions of other participants.

To learn more about TRs, visit the following link: http://www.pz.harvard.edu/thinking-routines. On this site, you will find Project Zero's Thinking Routine Toolbox, organized into categories that describe the types of thinking each routine helps promote. By clicking on each routine, you can access a new page where you can download the PDF file, available in English and, in some cases, in Spanish. Each routine uses a similar template that describes its purpose, offers possible applications, and suggests tips for its use.

CORE THINKING ROUTINES INTRODUCING & EXPLORING IDEAS

DIGGING DEEPER INTO IDEAS SYNTHESIZING & ORGANIZING IDEAS

INVESTIGATING OBJECTS AND SYSTEMS PERSPECTIVE-TAKING

CONSIDERING CONTROVERSIES, DILEMMAS, AND PERSPECTIVES

GENERATING POSSIBILITIES AND ANALOGIES

EXPLORING ART, IMAGES, AND OBJECTS GLOBAL THINKING

Types of thinking categories that foster TRs: https://pz.harvard.edu/thinking-routines.

Why are Thinking Routines so popular with educators?

TRs spark educators' interest and have gained popularity for several reasons. One common reaction we've observed is the amazement teachers feel when they discover the depth of thinking, imagination, and expression that students are capable of. Alina Toribio, a Panamanian educator, reflected on her first experience with the "See, Think, Wonder" routine, expressing her surprise at, "*The imagination children have and how spontaneous they express their thoughts.*"

When educators use TRs, students' ideas "come to light" and become visible, allowing students to become protagonists of their own learning process. It can be powerful for students to see that their teacher is not just seeking predetermined right or wrong answers, but is genuinely interested in their thoughts and opinions. This perception helps motivate students to engage more actively in discussions. Yadineth Batista, another Panamanian teacher, expressed this sentiment: "*I noticed that the children are very observant; they look for the smallest detail, get excited about participating, and work hard this way because it allows them to further explore their imagination.*"

These experiences demonstrate that TRs create fertile ground for promoting not only **inquiry** but also **collaboration**.

They often encourage discussions and collaborative work among students, fostering more active learning. In this context, listening to students and giving them space in the conversation holds significant value.

Moreover, TRs are relatively easy to introduce and provide a clear, straightforward **structure** for implementation. Their simple and accessible format allows educators to integrate them into their daily practice without extensive preparation. The key lies in **reflecting** on their implementation and **observing** how students and colleagues respond.

Additionally, TRs are **flexible and adaptable**, facilitating their integration across various topics and contexts, from preschool to higher education, to promote a deeper **understanding** of content and encourage active student participation.

While TRs spark educators' interest and have the potential to transform pedagogical practices, experience has shown us that this transformation is not an easy task. Various challenges can lead to TRs being used in limited ways.

Teachers from Juan José Canovas School in Veraguas, Panama, are exploring the See-Think-Wonder thinking routine.

What challenges can arise?

In studying the classroom practices of various educators and reflecting with them, we have identified some common challenges related to: (1) understanding the purpose of TRs, (2) slowing down to allow time for ideas and thinking, (3) documenting ideas to deepen learning, and (4) overcoming the fear of making mistakes and relinquishing control. For each of these challenges, we show what they can look like in practice and offer ideas for addressing them.

Challenge n.° 1: Understanding the Purpose of Thinking Routines.

To leverage the potential of Thinking Routines (TRs), it is essential to grasp their purpose. Curricula are often viewed merely as lists of content and activities, and this limited perspective can also apply to TRs if they are approached solely as tasks to complete, without considering their role in fostering learning and understanding.

It is vital to situate TRs within a broader educational context and reflect on their purpose. For instance, the routine See-

Think- Wonder is very effective for enhancing students' observation skills and sparking their curiosity about a new topic. A teacher might choose a different routine to encourage students to consider multiple perspectives on a topic.

Some key questions to consider are: What do we want our students to understand and why given the content we are teaching today? And how do TRs contribute to these goals?

Signs:

Some signs that the broader purpose or potential of TRs has not been understood include:

- **Isolated activities:** TRs are used as disconnected, standalone activities that lack integration with the overall classroom curriculum and existing teaching practices.

- **Focus on "getting the work done" rather than learning:** Some teachers prioritize keeping students busy, which can result in putting together a variety of TRs without a clear focus. In some cases, this can result in routines being reduced to worksheets.

- **Perception of TRs as simple activities:** Some teachers, especially those with limited experience using TRs, may view them as straightforward activities, which may prevent them from fully appreciating their complexity and potential. This perception is sometimes reflected in educators talking about TRs in very general terms or sounding overly confident that they know how to use them after trying them out just once.

When we overcome this challenge, what does it look like?

- When educators develop a deeper understanding of TRs, they acknowledge both the complexities and challenges associated with their implementation. **TRs become integrated into their daily practice**, enhancing the visibility of thinking and learning in the classroom. Juan Luis Ochoa, a Communications coach at Innova Schools, reflected: *"I believe my greatest growth has come from using thinking routines for moments of analysis and reflection on my teaching practice. This has led to me creating better-organized spaces and deeper dialogue."*

- As educators become more adept at using TRs, **they shift from viewing them as isolated activities to understanding them as essential tools** for fostering thinking and exploring meaningful content and ideas. TRs are intentionally selected to support understanding, with a focus on topics that are interesting to students.Piero Pino, also a Communications coach at Innova Schools, commented on his learning process with TRs:

  "(...) This repertoire of strategies allows for students' thinking to develop toward more critical and reflective responses. It helped me a lot to observe how students do this and put it into practice. Perhaps, I previously saw [TRs] (...) as just another activity, but now I can also understand what the central purpose is and the preliminary steps that both the teacher and the student need to take to execute and develop them."

When educators become familiar with the use of TRs, they begin to recognize the importance of aligning content with the thinking skills necessary to develop a deep understanding. This involves identifying fundamental ideas, concepts, or facts to explore, as well as the cognitive skills necessary for inquiry and deeper engagement.

Challenge n.° 2: Slowing Down to Allow Time for Ideas and Thinking.

The systematic use of TRs in the classroom can encourage us to rethink how we manage time, creating more space for both educators and students to think, reflect, and observe. Consistently using TR's allows us to slow down to ask questions that stimulate thinking and encourages students to generate and share their ideas. Allocating time to TRs fosters meaningful learning by providing moments for students to not only express themselves but also to process and reflect on their thoughts. It is essential to recognize that both learning and thinking require time and careful observation.

Signs:

Some signs of difficulty in slowing down and giving time for students' ideas and thinking include:

- **Coverage over discovery:** The pressure on teachers to cover a certain amount of curriculum content often leads to prioritizing coverage over genuine learning.

- **The risk of rushing**: Rushing through the steps of TR in a disconnected manner can hinder the consideration of students' ideas, limit opportunities to build on those ideas, and disrupt the flow of conversation. This rushed approach may indicate a need for greater understanding of the sequence of questions and how each one should build on the previous one and can ultimately result in a less enriching experience for students.

When we overcome this challenge, what does it look like?

- When educators navigate this challenge, a genuine commitment to **observing** and **listening** to students and colleagues is evident.

- Classroom dialogue is rooted in students' ideas and **questions**, leading to an evolving conversation as the questions themselves change over time.

- The experiences and **everyday lives of students** are integrated not only into the conversation but also into the content being studied. Students recognize that they can learn <u>from</u> and <u>with</u> their peers, fostering greater collaboration and participation.

When teachers consistently use TRs to discover and encourage thinking, students see that their ideas and opinions are valued, which motivates them to engage more actively in discussions.

For instance, Panamanian teacher Yadineth Batista shared her experience using the See-Think-Wonder routine with young students: "*I was surprised by how much imagination these children have; they possess skills, and this approach helps them further develop their imagination and overcome their fears by allowing them to interact and exchange ideas with their classmates.*"

As educators integrate TRs into the classroom dynamic, they become more intentional in the sequencing of questions, observing how each question builds on the previous one. However, it is important to remember that the art of questioning requires time; good questions emerge from practice, reflection and also involve the art of listening. Over time, students as well as teachers can develop the capacity to ask powerful questions. Olga Cossio, a principal at Innova Schools, noted: "*Learning to use routines has allowed students to develop curiosity and reflection, resulting in deeper, more powerful, varied, and creative questions aligned with each subject area.*"

Ultimately, as routines are adjusted and adapted to meet students' needs, teaching becomes more personalized and effective.

Challenge n.° 3: Documenting Ideas to Deepen Learning and Improve Teaching Practices.

Documentation—capturing and reflecting on the development of students' ideas over time to inform next steps—is a crucial component in the effective use of TRs and plays a fundamental role in the development of thinking and learning. This process allows us to observe, record, and make ideas visible, which we can then use for reflection and sharing to build new perspectives and foster collective learning. Additionally, documentation helps us make our processes visible, enabling us to reflect on our practice and inform our next steps for continuous improvement in learning. However, documentation is not an easy task.

Signs:

Some signs that indicate difficulties in documenting learning include:

- **Lack of time:** Many educators feel overwhelmed by the numerous activities and responsibilities they must manage in their daily practice. This often prevents them from recording their students' ideas or responses during class and reflecting on this information later.
- **Documentation without a clear purpose:** Frequently, documentation is done without a clear goal or purpose, and this information is not used for reflection or to inform the next steps. Many educators work in schools that require significant amounts of documentation that are not actually used to reflect on the learning happening in the classroom. This creates an unnecessary workload, leading teachers to compile lengthy notes that they do not know how to utilize later.

When we overcome this challenge, what does it look like?

- Documentation is done with intention and a clear purpose, both in the selection of the TR and in what is documented.

- Educators may document less, but the information they collect is used extensively to support meaningful conversations with colleagues, administrators, and parents.

- Documentation is shared not only to report what was done but also to highlight what was learned and how learning continues.

Gabriela Yllaconza, a science coach at Innova Schools, shared how documentation has helped her improve her practice: "*I used to gather a lot of evidence to have it 'just in case' I needed it, but sometimes I never finished reviewing or using it. Understanding that documentation is not just about collecting evidence, but that it should start with a purpose, has significantly helped me to optimize my work as a coach.*"

Challenge n.° 4: Overcoming the Fear of Making Mistakes and Letting Go of Control.

TRs provide numerous opportunities for exploration, experimentation, questioning, and reflection. It is important to create enough space and freedom for these processes to unfold alongside following guidelines to support the journey. Creating a safe environment where both educators and students feel motivated and confident to engage with TRs, make mistakes, and learn collaboratively is crucial.

Signs:

- **Excessive control:** Some educators may feel inclined to tightly guide the use of a TR and closely monitor student responses at each step. This approach can sometimes lead to expecting immediate correct answers, limiting opportunities for free exploration of ideas.

- **Discomfort with challenging questions:** Teachers may feel anxious about the possibility of students asking questions for which they do not have an immediate answer, creating a barrier to open dialogue.

- **Trying to do too much:** Some educators may choose to implement multiple routines during a single class, which can limit the time available for free and deep exploration of ideas. Promoting deeper inquiry into emerging questions can enhance the overall learning experience.

When we overcome this challenge, what does it look like?

- **Change in the role of the teacher:** Educators begin to provide more space for students to build their own learning. Instead of seeing themselves as "the expert" with all the answers, they create a trusting environment that fosters active participation, exploration, and collaboration. They seek to balance offering support and guidance with enabling the freedom students need to experiment.

- **Flexible use of TRs:** The routines are used flexibly and adapted to the classroom dynamics, enabling students to express their ideas and thought processes.
- **Active participation:** Student participation increases, and their work reflects ongoing learning rather than being focused on producing final products.

Diana Sánchez, a communications coach at Innova Schools, noted in an interview that while it was challenging to refrain from intervening or exerting control, she realized that mistakes could serve as valuable learning experiences. She also emphasized the importance of cultivating trust in teachers, even if that doesn't mean they always get things right: *"Trust in your teachers' potential, trust and let them be, because trusting them means recognizing when they do things well, but also when they might not make the best decisions."*

For her part, Leyda Cárdenas, academic coordinator at Innova Schools, highlighted the importance of letting go of control and learning from others: *"I learned to use thinking routines to help me more objectively gather teachers' insights on how their students learn. I also started using digital tools, surveys, and interviews to truly listen to the student voice."*

Maximizing Thinking Routines: Tips for Transforming Our Practice

These tips are drawn from our experiences, encompassing both what has worked well for us and mistakes we have made, as well as insights from colleagues who have extensively used TRs.

- **Understand the purpose and be intentional:** Define the purpose of using a specific TR and how it will support the achievement of your learning goals. Each routine has a specific objective, so it is crucial to identify the type of thinking you want to cultivate. Ron Ritchhart has developed a helpful [map](map) to help with identifying the thinking skills that will support advancing students' learning goals.
- **Introduce TRs gradually:** Take time to learn how to use a TR and feel comfortable with it before rushing to try several at once. Start with one routine and then use it with your students and colleagues several times. Observing how students and colleagues respond is one of the best ways to make the most of these tools.
- **Document the process:** Observe and record how students engage with the routines, as well as the outcomes of the experience. Documentation helps to make thinking and progress visible, telling the story of the learning that is happening.
- **Be patient and flexible:** Implementing new routines can be a gradual process. Be patient and flexible, adapting to your specific context. Expect the learning journey to be messy, but also rich with insights and new perspectives.
- **Collaborate and reflect with other educators:** Share and reflect on the documentation of your experiences and strategies with colleagues who also use TRs. Collaboration can offer new ideas, perspectives, and approaches to improve the use of these routines. Engage in this reflective process collaboratively, considering some of the following questions.

Questions for Reflecting on the Implementation of TRs:

Selecting a Thinking Routine:

- What do I want to achieve with this TR? What types of thinking will help students to understand this content?

- Why do I believe this TR is the best fit for my learning goals?

- How does this TR connect to the topic or activity I have planned?

- How will I know if I've been successful?

Reflecting on Implementation and Results:

- How did I feel during this experience?

- What have I learned about my practice and my students?

- How has my thinking and perspective evolved throughout this process?

- What impact has this experience had on my personal and professional growth?

Looking Ahead:

- How can I continue to develop my skills in effectively implementing TRs?

- How can I foster reflection on what we are learning and how we are doing it?

- To what extent has this TR facilitated my learning alongside my students, and how am I communicating that?

- What adjustments can I make in the implementation of the routine based on my students' feedback and my own observations?

Conclusion

Our experience working with educators in Latin America, along with insights from others using TRs in different contexts, has demonstrated the potential transformative power of these tools in teaching and learning. By promoting thinking, inquiry, and collaboration, TRs contribute to establishing practices that foster deeper understanding and meaningful learning.

As we have highlighted in this article, it is essential to recognize the challenges that may arise when implementing TRs, as well as some strategies to overcome them. While these challenges are common, they can be addressed, leading to significant improvements in teaching practices and student learning.

To achieve these changes, we have learned that dedicating sufficient time to understand a TR and its purpose is crucial. Our experience in facilitating sessions has shown the positive impact of modeling the use of a TR and providing the necessary time and space for educators to utilize, document, and reflect on this experience and the learning that emerges.

Furthermore, we believe that to harness the potential of TRs and transform teaching and learning, it is essential to slow down and provide space for exploration, reflection, and collaborative learning. In this process, it is essential to make ideas visible, focus on questions, and remain flexible and open to change, uncertainty, and mistakes.

Finally, we have observed how these changes have not only sparked interest and motivation in students but also in many educators who had got caught up in the day-to-day demands of their job and lost sight of the overall purpose of their practice. Now, these educators find greater satisfaction and a broader perspective on their work. This is illustrated in the following comment from Piero Pino, a coach at Innova Schools:

"I believe that this critical reflective process will truly benefit society. If we do not educate critical, reflective individuals who recognize what is happening in their context, not only in the country but globally- we could be working simply for the sake of working. Therefore, we need more pauses, more pauses during class moments, where we can generate deeper conversations."

Resources

- **Project Zero's Thinking Routine Toolbox.**
- **Deeper, Together: Practical lessons on cultivating deeper learning from a low-cost school network** Ritchhart, R., Church, M. & Morrison, K. (2011).
- **Making thinking visible: How to promote engagement, understanding, and independence for all learners.** San Francisco, CA: Jossey-Bass.
- Ritchhart. R. (2015). **Creating cultures of thinking: The 8 forces we must master to truly transform our schools.** Jossey-Bass & Pfeiffer Imprints, Wiley.
- Ritchhart, R., Church, M., & Morrison, K. (2011). **The power of making thinking visible: Practices to engage and empower all learners.** Jossey-Bass.
- **Teaching Complex Thinking through Art.** National Gallery of Art Talks video series.
- Barrera, M.X., León, P. (2018) **La reflexión en el desarrollo de la comprensión.** En Ruta Maestra. Edición 22. Editorial Santillana. Octubre, 2018.

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