

An interactive lesson platform



Japanese TTP-Based Math Curriculum

The Teaching Through Problem-Solving (TTP) approach aids students' ability to solve unknown problems with known concepts. TTP focuses on promoting classroom discussions. "LoiLoNote," a lesson platform, assists this interactive learning. We have developed a math curriculum that helps teachers use TTP to move away from traditional rote learning to one where students think independently, boosting their math application skills and test scores.

Teaching Through Problem-Solving (TTP)

Introduction to TTP

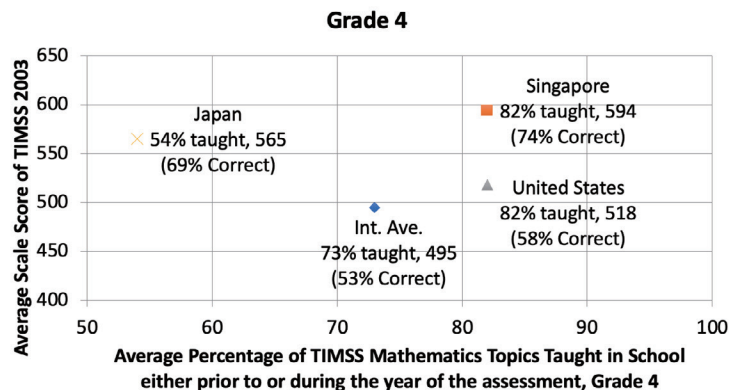
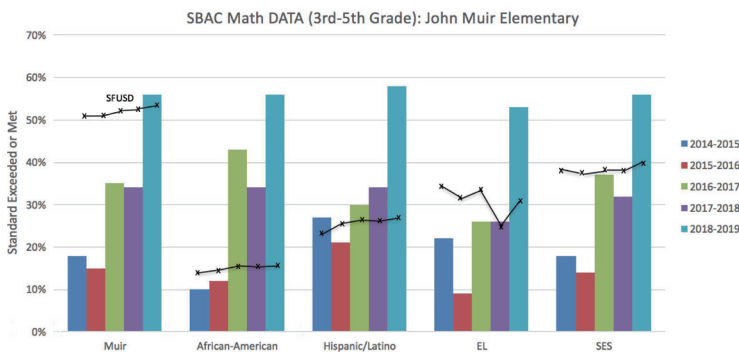
The Teaching Through Problem-Solving (TTP) approach to mathematics encourages students to discover and create independently. Instead of memorizing formulas, it emphasizes developing their skills to analyze and find solutions through activities such as comparing their answers with classmates' and having discussions. This fosters their ability to apply mathematical concepts and independently solve unfamiliar problems.



The Impact of TTP

The chart on the left provides evidence of TTP implementation at John Muir Elementary School in San Francisco. It highlights a window between 2014 to 2019 in which they incorporated TTP into their math education program, showing positive student learning outcomes across all school subgroups.

The chart on the right shows the relationship between the percentage of test material taught in class (X-axis) and students' test accuracy rate (Y-axis). Notably, data from Japanese students reveals that they use their accumulated knowledge to figure out the correct answers to questions they have yet to learn.



Note: The graph is a reprint of Figure 6.1 The impact of school-wide Lesson Study from page 197 of Takahashi, A. (2022).

TIMSS 2003 International Mathematics Report Grade 4: Exhibit 5.7.(p.193), Exhibit C. 1 (p.402)

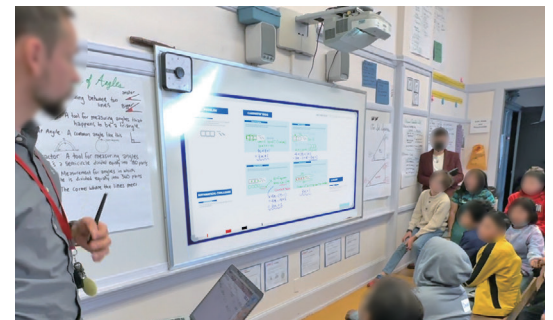
Teaching Through Problem-Solving (TTP) in Action

Insights from Japanese Education: Empowering Students to Master the Art of Finding Solutions

- Japanese schools adopted the TTP approach in the 1990s.
- Through TTP, students learn how to solve unfamiliar problems using what they have learned.
- Teachers don't act as lecturers but as observers of students as they work independently and facilitators of whole-class discussions of their different approaches to solving a problem.
- TTP supports students' development of mathematical thinking skills.

TTP-Driven Teaching: Sparking Student Initiative in Tackling the Unknown

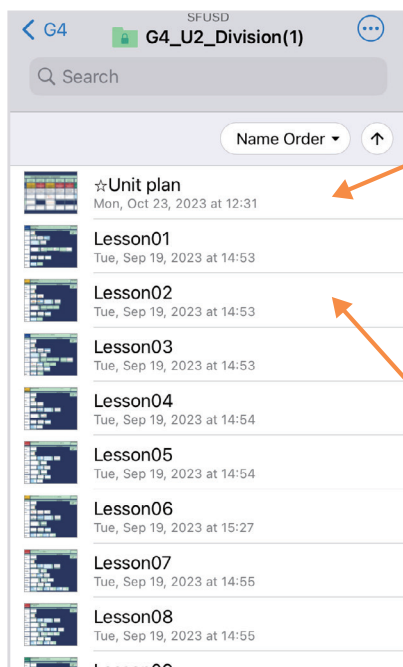
In TTP lessons, both teachers and students freely and quickly conceptualize, create, and present ideas. Collecting each student's responses for sharing, comparison, and discussion is crucial for successfully implementing TTP in the classroom. This enables students to learn from one another and understand the essence of the learning process, including dealing with the unknown.



Digitalizing TTP Lessons: Making TTP Teaching Accessible to All

Teaching in this manner can be challenging for educators in terms of technology and skills. However, using the digital interactive lesson platform “LoiLoNote,” along with LoiLo TTP content, can help overcome these challenges.

LoiLoNote offers all the necessary features for TTP instruction, particularly the fundamental sequence critical to TTP, which includes collecting, sharing, comparing, and presenting student responses, all achieved digitally. Teachers can effortlessly integrate TTP into their lessons using LoiLoNote.



Unit Progression (Total 19 Lessons + Unit Assessment)										
Lesson1	Lesson2	Lesson3	Lesson4	Lesson5	Lesson6	Lesson7	Lesson8	Lesson9	Lesson10	
Lesson Title Let's Think About Ways to Divide Large Numbers (1)	Lesson Title Let's Think About Ways to Divide Large Numbers (2)	Lesson Title Let's Think About Ways to Divide Large Numbers (3)	Lesson Title Let's understand the division algorithm (1)	Lesson Title Let's understand the division algorithm (2)	Lesson Title Let's understand the division algorithm (3)	Lesson Title Let's understand the division algorithm (4)	Lesson Title Let's understand the division algorithm (5)	Lesson Title Let's understand the division algorithm (6)	Lesson Title Let's understand the division algorithm (7)	Lesson Title Let's understand the division algorithm (8)
Lesson Objectives										
Major Tasks										
Essential Questions/New Ideas										
Summary										

Unit Plan

Objectives of the Lesson		Materials Needed for the Lesson	
Lesson Segments	Lesson Materials	Teaching Notes	Teacher's Presentation Cards
Classmates' Reflections			Cards for Students
Let's Look Back at What We Discussed			
Understand New Ideas			
Let's Use It			
Comparing and Discussing			
Summary and Reflection			
Exercises / Formative Assessment			

Lesson Plan

Contents: Customize Teaching Materials to Maximize Your Lesson!

We offer an authentic TTP-based curriculum called **LoiLo TTP**, which is operated through LoiLoNote. We are currently developing content for mathematics education. We provide Unit Plans, which offer a comprehensive overview of the entire unit and include detailed hour-long lesson plans, among other resources. Everything provided is editable within the LoiLoNote app, allowing teachers to make appropriate adjustments according to the specific needs of their class and students.

Apply What You Learned

There are 1500 stickers.
If 5 students share the stickers equally, how many will each get?
Explain how you figured out your answer using base ten blocks.

When ready, submit your card or photo of your work to the teacher using LoiLoNote.

My Math Note

Students' digital notebook that contains Problem, Mathematical Challenge, My Idea, Classmates' Ideas, Summary, and Reflection Cards on a single screen.

▲ Lesson Material (For teachers)

Each lesson includes ready-made materials such as problems and illustrations. Edit, submit, and share them via LoiLoNote.

▲ My Math Note (For students)

Students' digital notebook that contains Problem, Mathematical Challenge, My Idea, Classmates' Ideas, Summary, and Reflection Cards on a single screen.

Materials for teachers		
• Unit plans	• Lesson plans	• Teaching material
• Assessment questions	• Teaching guidelines	• Digital board (CTB)

Materials for students
• My Math Note
• Review Cards

Exploring Collective Thinking Board (CTB)

In LoiLo TTP, we offer the “**Collective Thinking Board**” (CTB), a digital white board specifically designed for facilitating discussions using students' responses. The CTB simplifies the process for teachers to compare and contrast students' work, promoting in-depth mathematical discussions and fostering profound student learning.

TTP Collective Thinking Board

Selected student works

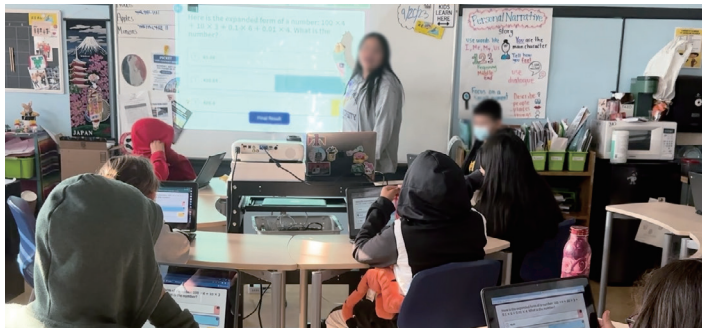
Handwritable to support discussions

LoiLo TTP Lesson Sequence

LoiLo TTP has been developed to be used exclusively on our LoiLoNote learning platform. It includes everything needed for class.

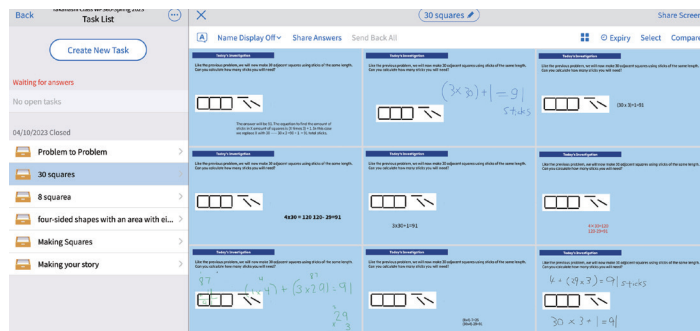
1. Handing out materials to the class

Instantly and easily distribute worksheets



2. Collecting students' responses

Instantly and easily distribute worksheets



3. Comparing students' responses

Gather and display responses onto a CTB Card. Compare, contrast, and comment to facilitate discussion.



4. Summarizing the day's lesson on "My Math Note"

Students summarize and reflect the day's problem, discussion, and their own understanding.



LoiLoNote School

Think visually, Learn together

LoiLoNote School is an interactive lesson platform specially designed for Student-Centered Learning. Its game-like interface offers quick feedback which enhances visual thinking. With its intuitive features, students can easily explore and learn independently or collaboratively, leading to increased student motivation. LoiLoNote is a cloud-based app compatible with all OS and suitable for all grades and subjects. Plus, it offers unlimited data storage.



12,000
schools

2.4mil
daily users



Japan, The United States, Hong Kong, Taiwan, Malaysia, India, as well as EU countries.

<https://n.loilo.tv/>



Free trial year for all schools

Try our full-featured service. One year is free for all schools, public and private!

Contact Us

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