Announcement of the online program for SEAMEO School Network (free of charge), 2024
Online Program by CRICED, University of Tsukuba, Japan

Title:

Mathematical Thinking VII: How to develop it at Lower Secondary Level through Problem Solving Approach

Provided by

CRICED, University of Tsukuba: Affiliate Member of SEAMEO

Lectured by

Masami Isoda, Prof/PhD, University of Tsukuba, Japan

With contribution of (tentative)

Sumardyono, Sri Wulandari Danoebroto, Uki Rahamawati, Wahid Yunianto et al: SEAMEO Qitep Mathematics, Indonesia, Maitree Inprasitha, Narumon Changsri, Nisakorn Boonsena & Uk Inprasitha: Khon Kaen University, Thailand., Wan Noor Adzmin Binti Mohd Sari: SEAMEO RECSAM, Malaysia., Nguyen Chi Thanh: Vietnam National University, Viet Nam., Aida Yap, Guillermo Bautista Jr.: UP-NISMED, Teh Kim Hong & Gan Tech Hock: ASMEP, Malaysia., Marcela Santillan: Universidad Pedagogica Nationale, Mexico., Raimundo Olfos & Soledad Estrella: Pontificia Catholic University of Valparaiso, Chile., Yuriko Yamamoto Baldin: Universidade Federal de São Carlos, Brazil.

Course Summary

This course focuses on how to develop Mathematical Thinking in classroom as a part of Higher Order Thinking Skills (HOTS) in mathematics at the Lower Secondary School Level. On this theme, CRICED had provided the online courses 'Mathematical Thinking I~VI.' Most of them focused on Primary School Level. This new course 'Mathematical Thinking VII' focuses on the Lower Secondary School Level for Problem-Solving Approach, in another words 'Teaching through Problem Solving.' It is the familiar approach in Japan to develop mathematical thinking based on what students already learned and to prepare the future/further learning which is now well known in the world through these courses.

For the primary school teachers, it is also meaningful to learn how primary school mathematics progress and extend at the lower secondary school. Because teachers already knew mathematics at least upper secondary level, it is not easy for them to distinguish between primary and secondary level mathematics and then, it provides the origin of misconceptions for students. Primary school teachers are possible to prepare students who challenge further learning at lower secondary level with enjoyment if they know what students will learn in near future.

To explain how to develop mathematical thinking, this course will refer Southeast Asia Mathematics Curriculum Standards (SEA-BES: CCRLS Mathematics), English Edition of Japanese Mathematics Textbooks published by Gakko Tosho which are adapted into Indonesia and Thailand, as well as other international documents and so on.

Southeast Asian Ministers of Education Organization

筑波大学 University of Tsukuba

Course Roadmap for Mathematical Thinking VII in 2024

Topic	Title of Lesson (tentative)	Schedule (Tentative)
Mathematical Thinking VII: Lower Secondary Level	1. On Challenges from Letter to Algebra	August 7th
	2. On Challenges from Proportionality to Proportion and functions	August 14th
	3. On Challenges of the Extension of Numbers	August 21st
	4. Task Sequence for Problem Solving Approach with Dialectic	September 4th

All the lessons will begin on Wednesday afternoon from **14:00 (Japan time GMT+9)** through a live streaming via YouTube. Each lesson will be approximately 75 minutes long which includes assessment. Certificate will be provided for the participants who have completed all 4 assignments for the lesson by the set due date.

Registration for this course: Mathematical Thinking VII (Deadline June 25th, 2024): https://forms.gle/WRvHRtpdC4MwoBgH6

Registration for the orientation on June 18th, 11:15-13:00 (GMT+9)

Please join the orientation to know more about the course and the platform. Sign Up for the Orientation

Contact

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Further Information

Under Construction (To be developed in the CRICED website CRICED | SEAMEO School Network from CRICED-University of Tsukuba)

Reference

Past courses:
https://www.criced.tsukuba.ac.jp/online-contents.html
Mathematical Thinking:
https://bibliotecadigital.mineduc.cl/bitstream/handle/20.500.12365/17706/20_Mathematical%20Thinking%20How%20to%20Develop%20it%20in%20the%20Classroom.pdf
https://www.researchgate.net/publication/337875130_Masami_Isoda_-Shigeo_Katagiri_2016_Pensamiento_matematico_Como_desarrollarlo_en_la_sala_de_clases_Coordinacion_Segunda_edicion_Roberto_Araya_CIAE
Southeast Asia Mathematics Curriculum Standards:
https://www.criced.tsukuba.ac.jp/locked/SEABES_CCRLS_in_Mathematics_and_Science.pdf
https://www.criced.tsukuba.ac.jp/locked/Maths_Challenges_Classroom_Practices_Lower_Secondary_Level.pdf
Textbook:
Masami Isoda & David Tall (Eds). (2019). Junior High School Mathematics, 1, 2 & 3. Tokyo: Gakko Tosho. (as English Edition, and its Indonesia & Thai Adapted Editions)