

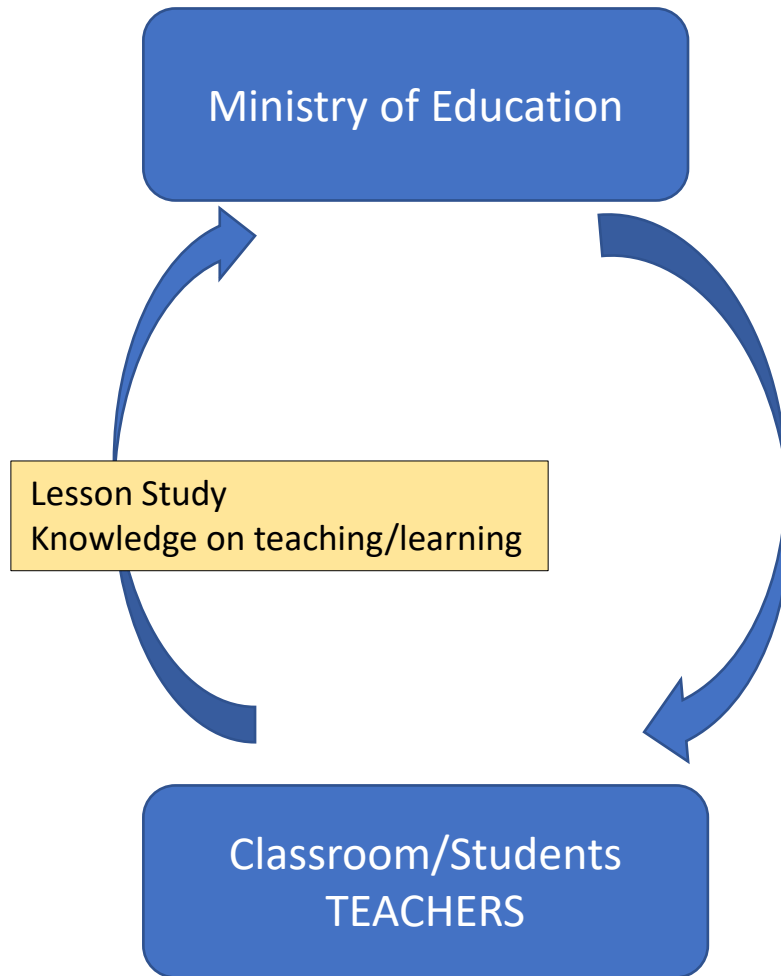
# THE ROLE OF DIFFERENT AGENTS IN THE COMPLEX EDUCATION SYSTEMS OF DEVELOPING COUNTRIES FOR THE IMPLEMENTATION OF LESSON STUDY GROUPS WITH INTERNATIONAL COOPERATION



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Congratulations to 20th Anniversary of CRICED- TSUKUBA



### The Lesson Study in Japan:

History of more than 150 Years:

- The establishment of the Ministry of Education, the school system
- Educational policy: change of teaching style, instructional materials, curriculum.

- ❖ From the very beginning, **Lesson Study** is a **research activity of Teachers**
- ❖ Teachers **producing knowledge for teaching**, oriented towards the **learning of the students**.

Basic Principles of Japanese Lesson Study:

- ✓ **Teachers learning to teach;**
- ✓ Teaching lessons **for the students learning by themselves**

The attention on Japanese Lesson Study in Mathematics Education outside Japan:  
Comparative studies in the 1990s (Stigler & Hiebert, 1999; Isoda et al. 2007)  
Cultural differences: teaching approaches, learning objectives, critical reflections, assessment.

### Issues and Challenges in introducing Lesson Study outside Japan.

what was learned from the US (Lewis et al, 2006; Watanabe, 2018):

the need to consider the local conditions to fully

**understand the process of teaching and learning in local culture;**

In Japan, **Lesson Study is school-based**, but only a few schools in the US engage in school-wide Lesson study, so there are misunderstandings and misconceptions about the Lesson Study principles, especially in planning the lessons.

### THE ROLE OF APEC- LESSON STUDY PROJECT IN EXPANSION OUTSIDE JAPAN FOR DEVELOPING COUNTRIES:

an umbrella organization to support the improvement of the  
education system through the Lesson Study **to overcome the cultural customs,**  
**working** with the **main actors** of the whole system.

**SEAMEO; Latin American countries.**

Khon Kaen Univ  
CRICED

JICA

Brazil is not an APEC Economy, with serious gaps in its educational system

Key research question to consider in organizing sustainable Lesson Study in the educational system of Brazil:

**WHAT COULD BE A KEY FEATURE OF A LESSON STUDY PROJECT IN BRAZIL THAT CAN BENEFIT FROM THE INTERNATIONALIZATION OF LESSON STUDY PRINCIPLES?**

# Brazil and the World:

Collaboration beyond the frontiers: CRICED/JICA;  
APEC-LESSON STUDY PROJECT



To understand the challenges and to identify the key actors to address the problems to establish sustainable Study Groups in Brazil, carried on since 2009:

Analyze the education system under the perspective of **Complexity Theory** and the roles of the **Agency** actors within the system.

System Dynamics (SD) and **Agent-Based-Model (ABM)** (Levin & Jacobson, 2017; Mital et al., 2014) permitted a design of hierarchical modeling of the different layers of the education system, in which the attributes for the intermediary agents define the strategy for actions to connect the different levels of the complexity.

## The sustainability of Learning Study Groups of Lesson Study in developing countries: Case of Brazil for Mathematics lessons. (Baldin & Silva, 2021- WALS presentation)

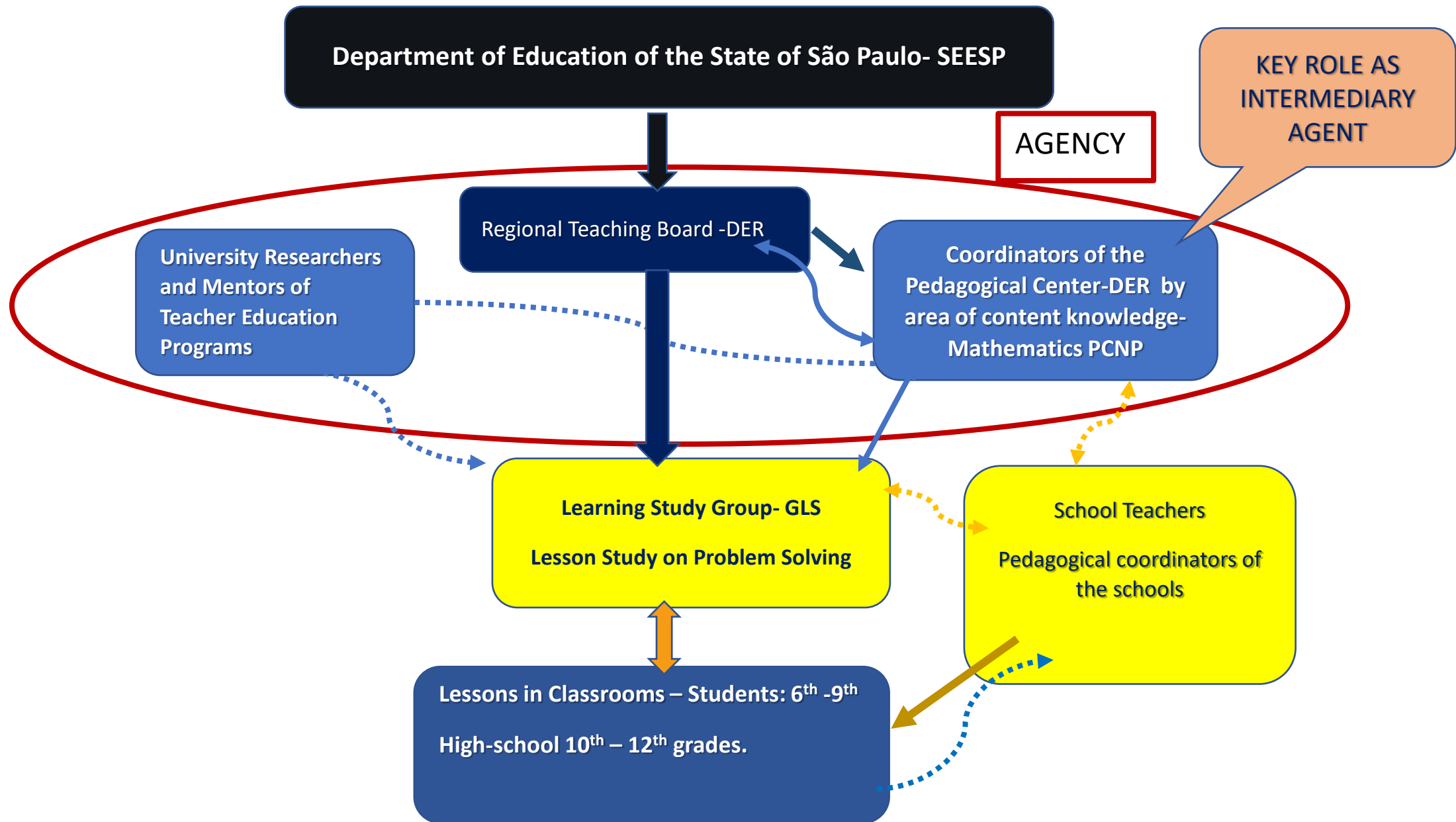
- The effective implementation of **Lesson Study** practices in Mathematics in the classrooms depends on the support of sustainable Study Groups (**SG**) working the core substance of Lesson Study principles.
- The organization of Study Groups as Learning Communities is a crucial strategy for the Professional Development of schoolteachers to become researchers of their own practice, learning the methodologies for the effective learning of students and changing the mindset for new paradigms.
- The analysis of the efficiency and the conditions for the sustainability of **Study Groups** was done with the framework of the Complexity Theory of Education Systems (Levin & Jacobson, 2017), following the Agent-Based-Model (**ABM**).
- **Findings:** The ABM framework made it possible the identification of the levels in the hierarchical structure of the local education system with the agents at each level and the precise **role of the agencies** that play the interface between the levels for sustainability of **SG** to develop local Learning Community.
- The **partnership** between *education policy offices – university researchers and teacher educators - education board officers* when their roles are precisely defined in the **ABM** model of the education system, *has been recognized as a crucial feature* to develop effective *research-lessons* for the learning of students, in the Study Groups in the state of São Paulo, Brazil.

## South America and Brazil



- ✓ The Education policy of the State of São Paulo is under the responsibility of the Department of Education of the state: SEESP
- ✓ The Department is divided into 91 Regional Teaching Board in the countryside of SP: DER centralized around one main city of each region.
- ✓ The authors (Baldin & Silva) coordinate, as collaborating University researchers, two Study Groups in the northwestern region of SP, DER- Jose Bonifacio (since 2016), and DER- Jales (since 2020).

The findings of this WALs report are results of the analysis of these still ongoing projects, in particular of the DER – Jales, to implement effective and sustainable Lesson Study Groups in Mathematics in public schools of the state education network.



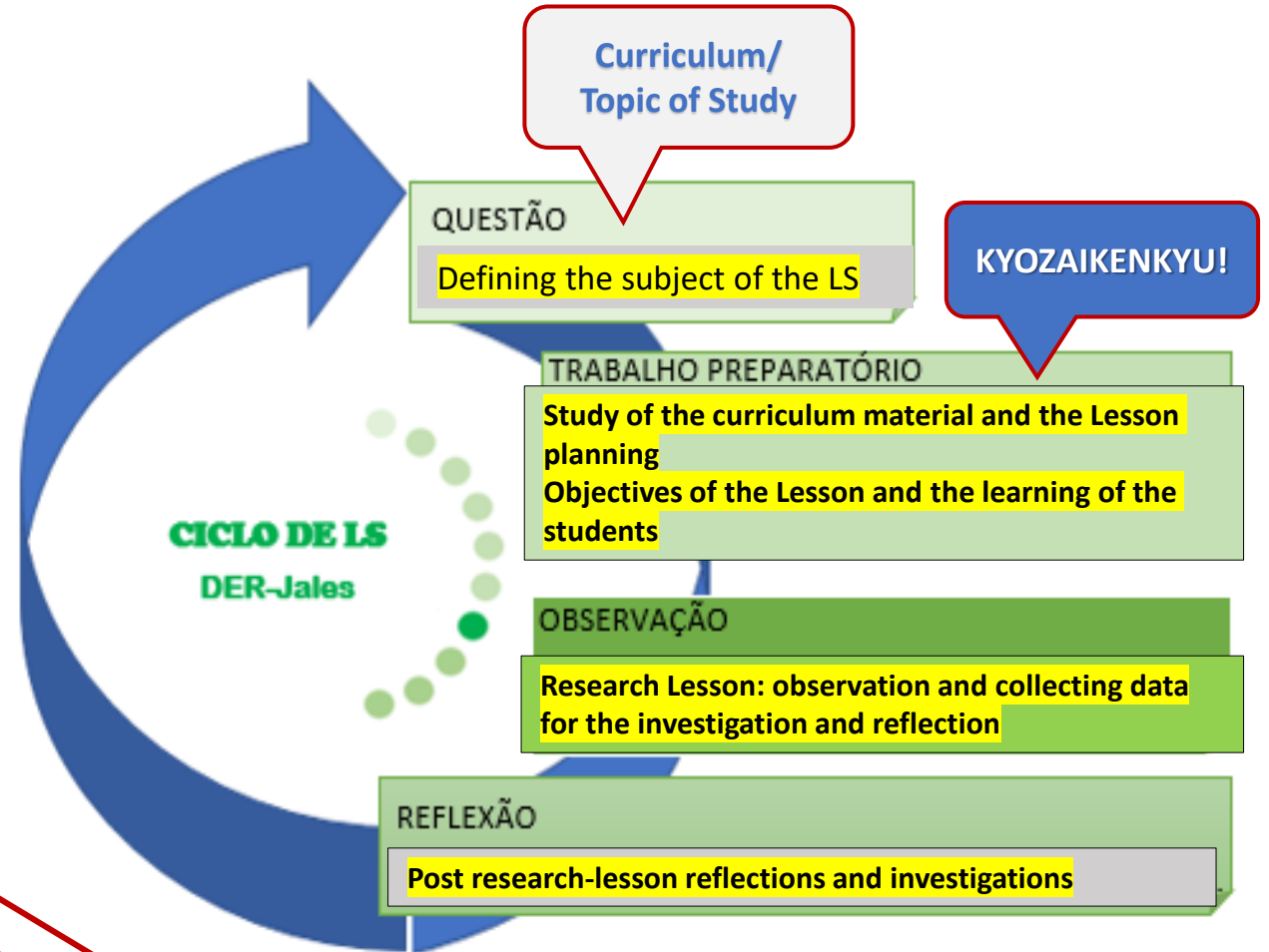
### Structure of Agent-Based-Model (Levin, Jacobson, 2017) for Lesson Study Group of DER-Jales

# The principles of LS programmed in the Study Groups

Researchers



Pedagogical Coordinators/  
Regional Board of Education





Guidance and support from **CRICED** to the Project Lesson Study- DE Jose Bonifacio (2018)



Brazil

Peru  
(Relme, 2017)



Chile

Synchronous Cross-Border Lesson Study in STEM (2017)  
**APEC Lesson Study Project, BRAZIL-CHILE**

**Collaboration for Cooperation Development is the KEY to progress towards the Quality Education**

Thank you very much for your attention!

Many thanks to all supporting the Project!

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