

Understanding Challenges of Curriculum Innovation and the Implementation:

What Impact Teachers' Practice and Students' Learning?



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Invited Plenary Seminar in Gakushuin University, Tokyo

Understanding Challenges of Curriculum Innovation and the Implementation:

What Impact Teachers' Practice and Students' Learning?



- Innovation: Where is the Evidence?
- Curriculum: What gets lost in translation?
- Didatik as “ways of seeing” the interplay of teaching and learning
- Bringing in the cultural artifacts through Activity Theory
- From the “collapse” of learning to the “renovation” of teaching



Conference theme:
Educational Innovation through **RENOVATING** Schools to
Learning Community in Asia

Innovation: “What is the Evidence?”



Innovation: “What is the Evidence?”

A woman in a space suit is shown from the chest up, looking out of a circular window in a spacecraft. She is wearing a white helmet with a clear visor and a blue and white space suit. The background is dark and filled with various spacecraft components and equipment.

What do we want to measure?

- how well have teachers taught
- how well have students learnt

Innovation: “What is the Evidence?”

Difference between *matter* and *meaning*:

".... we lost the ability to catch children's imagination and forgot what they are worth."



Curriculum Innovation: What gets lost in the translation?



- Public accountability
- Good structures in place
- School-based curriculum innovation with 'Teach Less, Learn More' (MOE, 2007)

Curriculum Innovation: What gets lost in the translation?



- Address diverse learning needs of students
- Intensification of diagnostic data
 - determine student needs
 - expand teachers' instructional toolkits

Curriculum Innovation: What gets lost in the translation?

- Professional Learning Community
- Teachers collaborate within grade- and subject-level teams
- Inwardly focused becoming silos of innovation



Curriculum Innovation: What gets lost in the translation?

- Teachers “live” outside these silos
- Problems, and solutions, exist outside the silos.
- Reform fatigue?
- Gap between what is expected versus what really is manageable and critical seems to be widening.



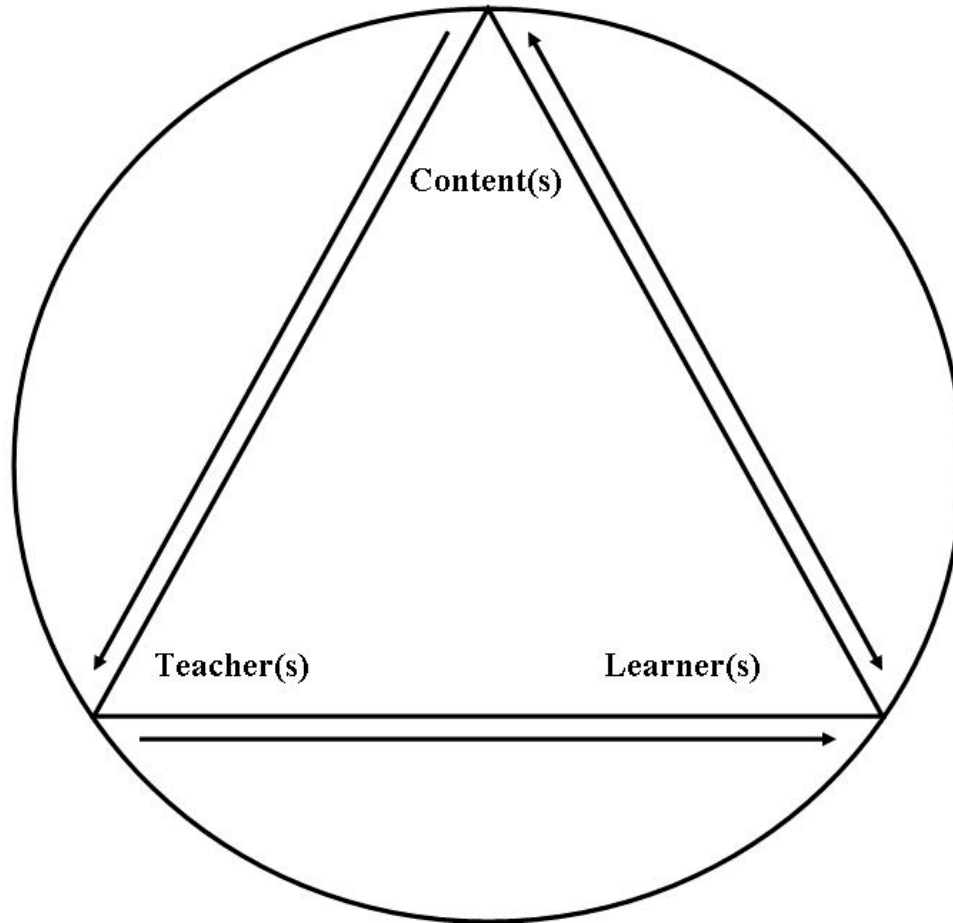
Curriculum Innovation: What gets lost in the translation?



“Ways of seeing” the interplay of teaching and learning

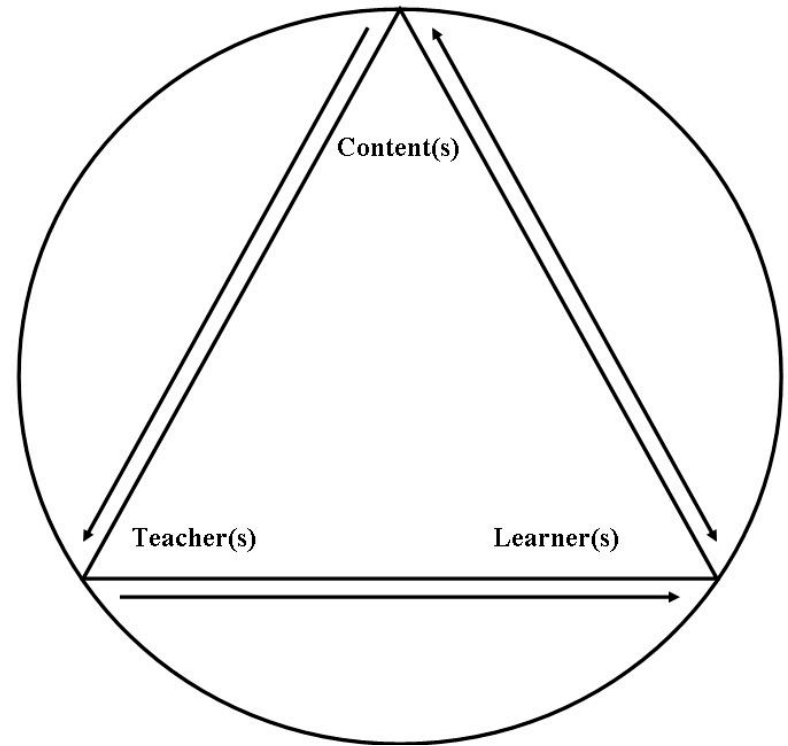


From Curriculum to *Didaktik*



From Curriculum to *Didaktik*

- Teaching and learning as embedded activities
- Framed by social and political conditions
- Enacted in a given classroom or school



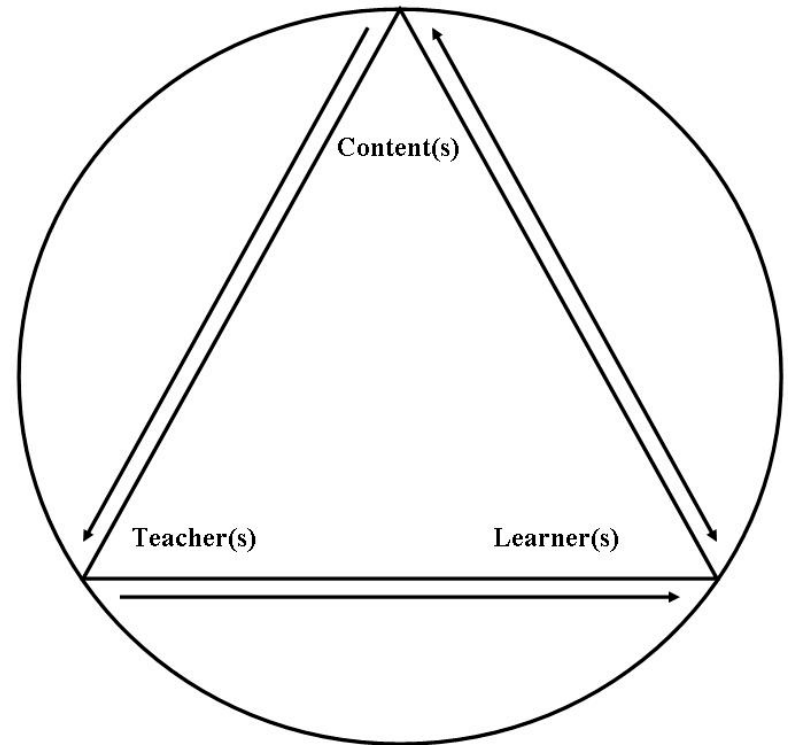
From Curriculum to *Didaktik*

Curriculum

- What, why and which subject matter should be dealt with
- *What knowledge is of most worth?"*

Didaktik

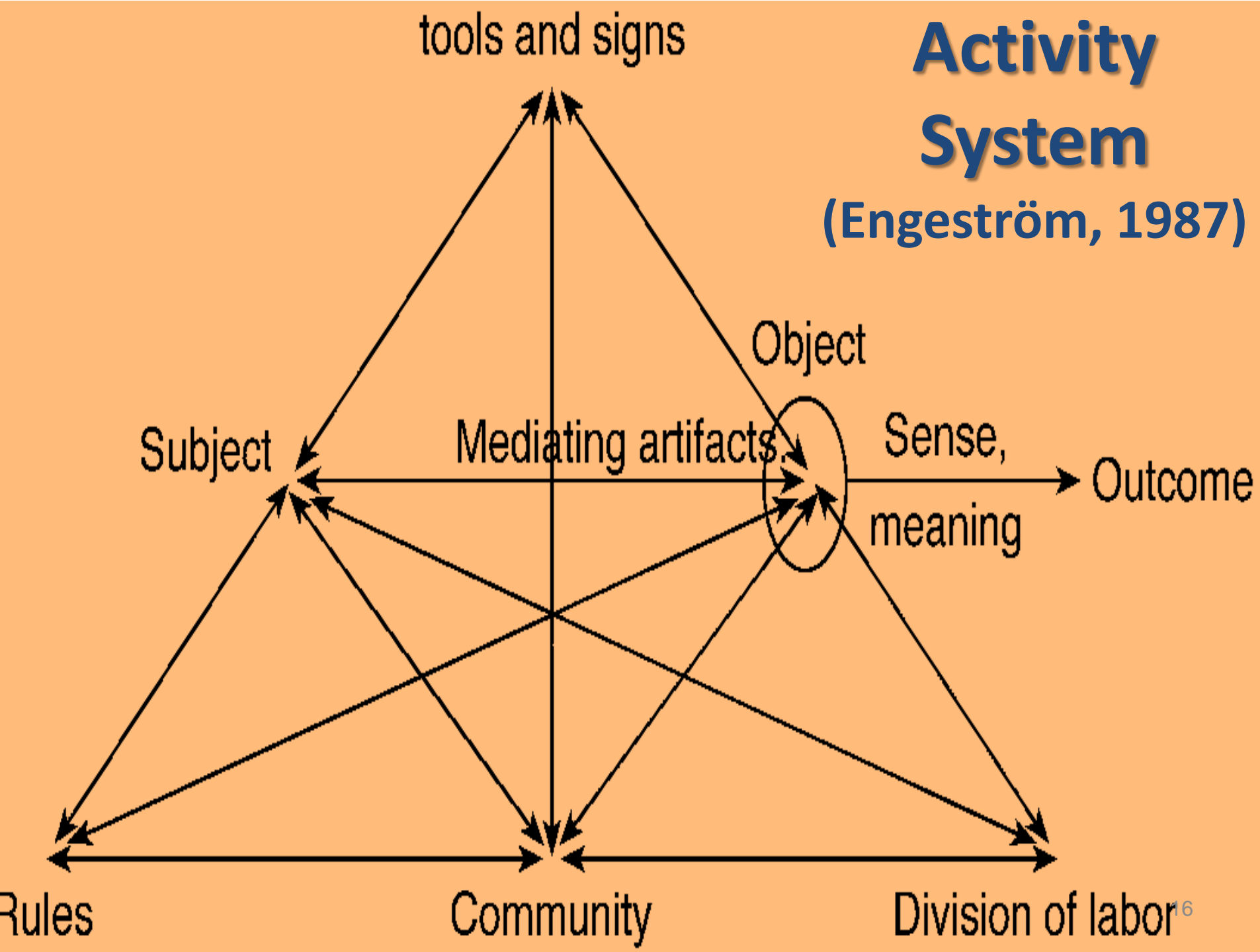
- How does teaching and learning unfold, and what might be helpful
- *How to open up the world for the student and the student for the world?"*



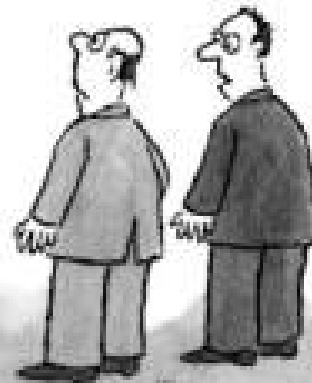
Didaktik sees the *what* question as **relational**

Activity System

(Engeström, 1987)

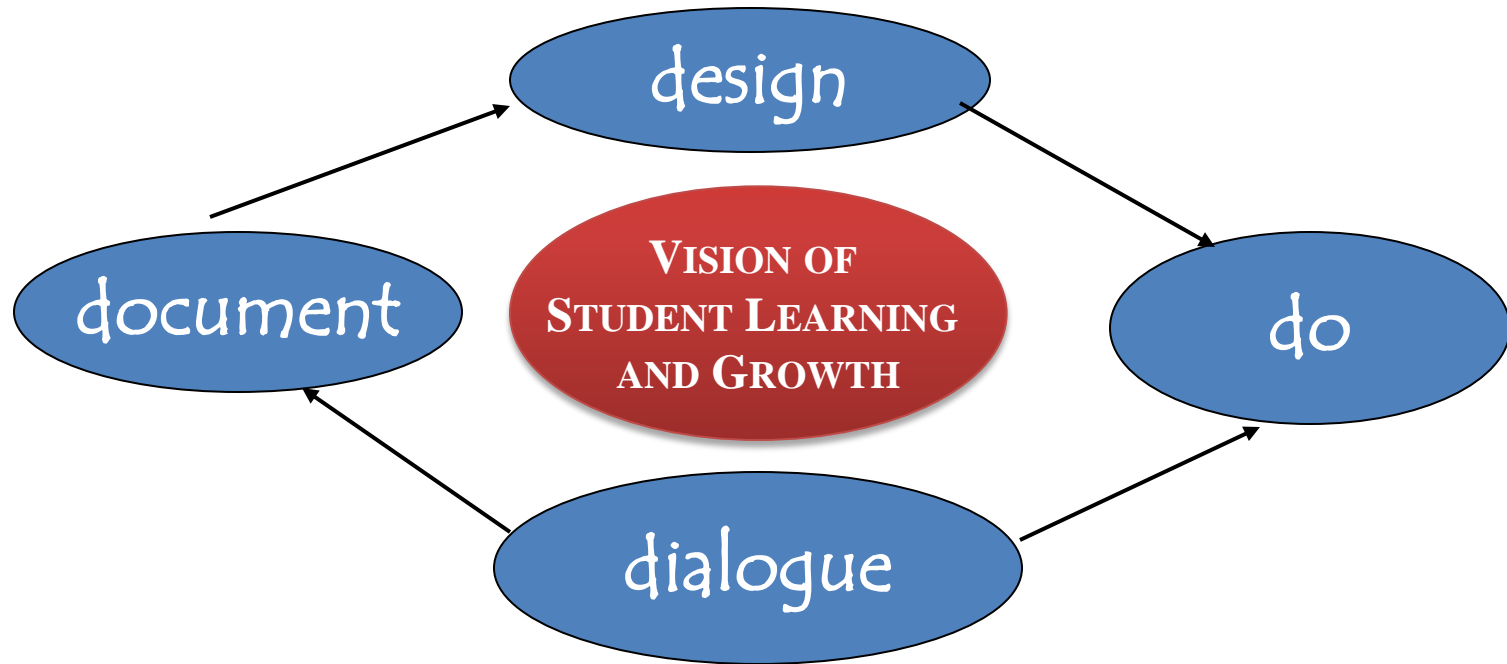


TOOLS



S. GROSS

LS RESEARCH CYCLE CREATES MANY KINDS OF **PRACTICAL KNOWLEDGE** THROUGH *CONNECTION,* *ENACTMENT, NARRATION AND ABSTRACTION*



Akita, K. (Dec 2006, HKIED)



“Some leaders do give teachers more space and time to reflect and make sense, but being the good civil servants we are, we tend to be too objective and the whole process dissolves into 'reporting'; not reflecting.

Discomfort arises when we see inadequacies in ourselves that we do not want to face up or do not want others to know because it takes too much EMOTIONS to do so. We'd rather finish our marking than ask ourselves WHY we are marking what we are marking.”

Activity Theory

- ***Object*** – elements of human activity is directed and transformed into results with the aid of physical and symbolic and external and internal thoughts
- ***Subject*** – the individual or group of individuals whose actions are considered interesting from an analytical point of view

“We jump too quick to pinpoint a certain problem and we start to **focus on that one issue and neglect the bigger issue.**”



Tools

Tools

Pedagogical content
knowledge, nature of
the subject

Interaction methods,
feedback, etc.

Learning analysis

Subjects

Role of the teacher

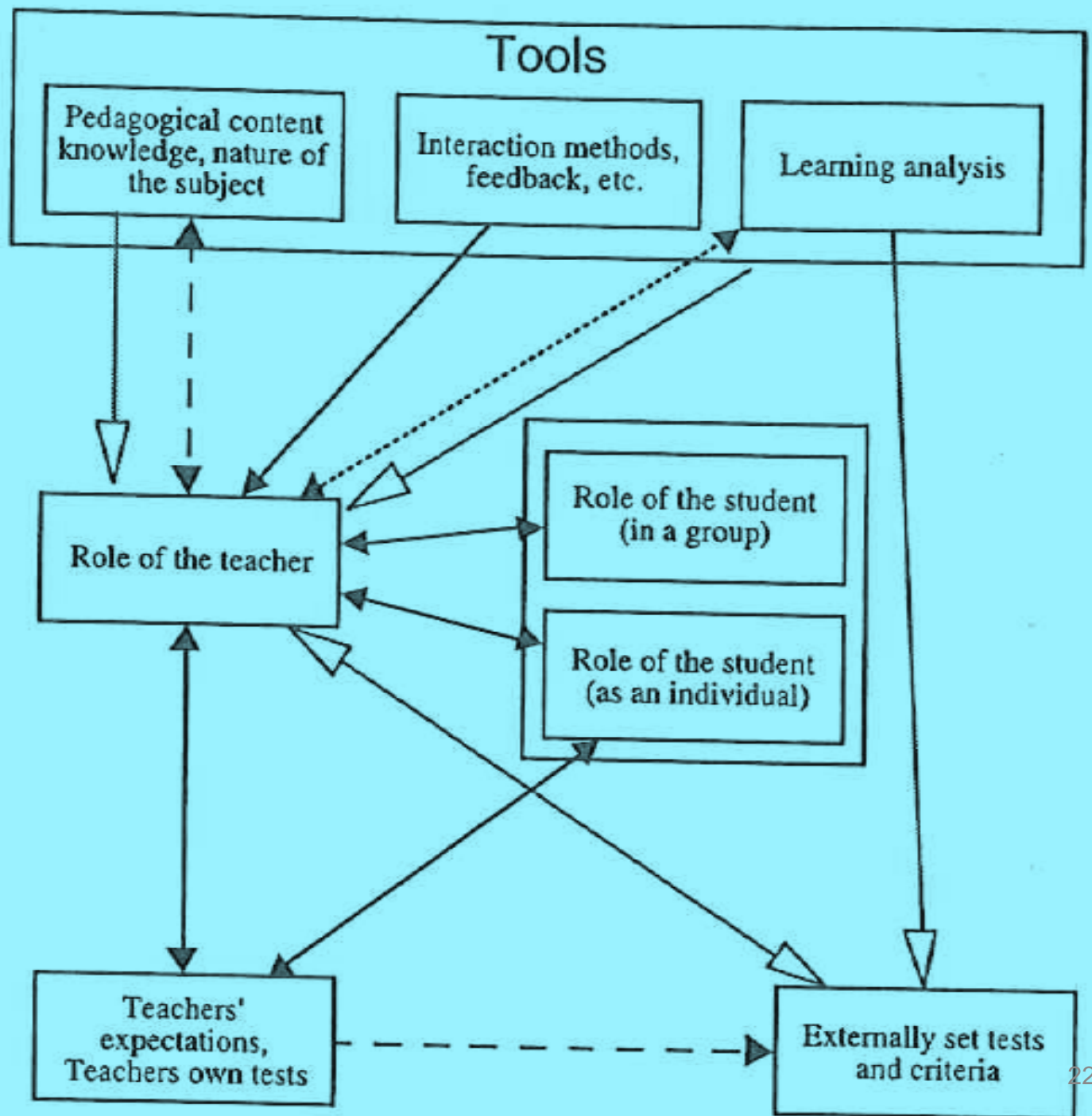
Role of the student
(in a group)

Role of the student
(as an individual)

Objects,
outcomes

Teachers'
expectations,
Teachers own tests

Externally set tests
and criteria





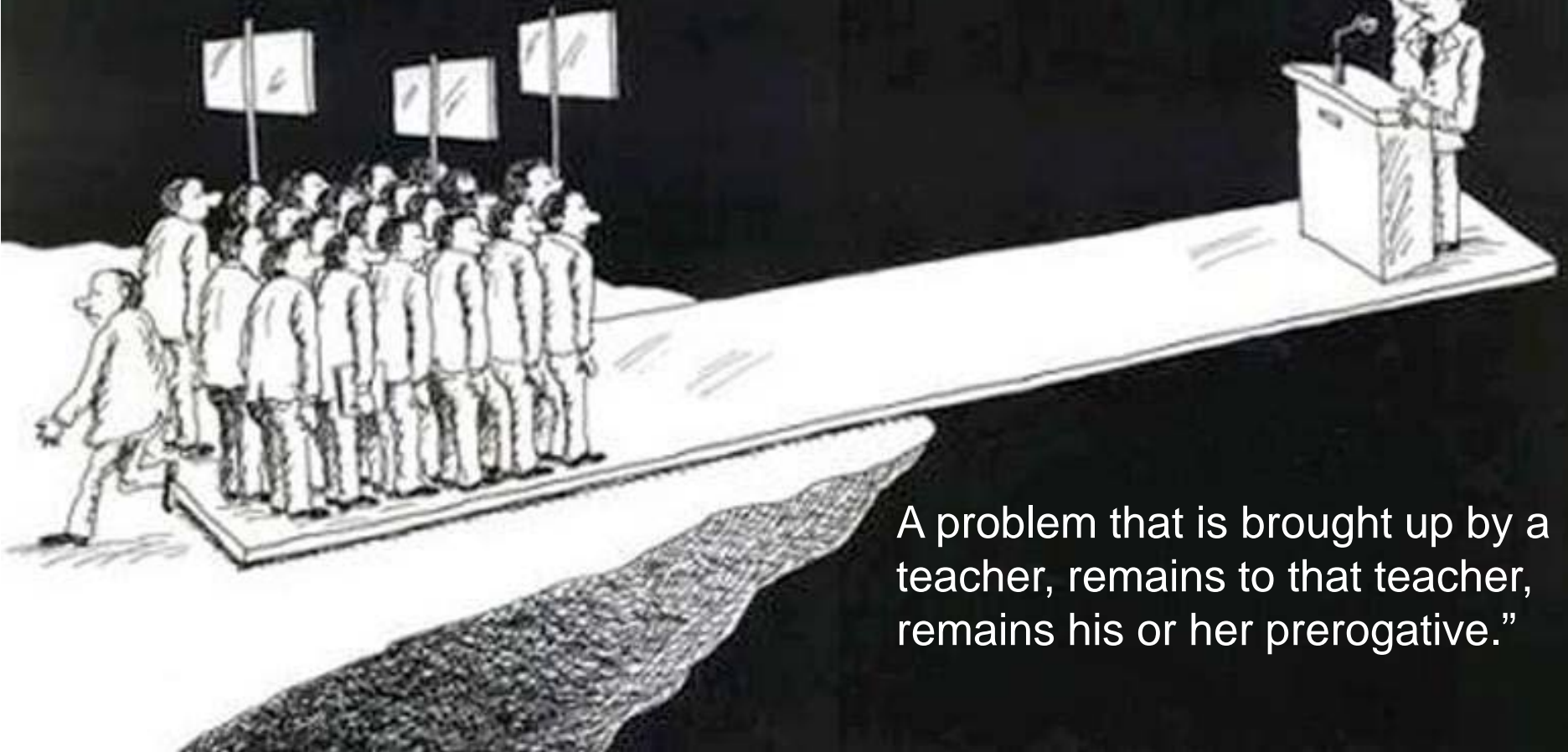
**Tip of the
iceberg but ...**

***what actually
lies beneath?***

Activity Theory

- Insertion of **cultural artifacts** into human actions
- Unit of analysis overcame the split between the Cartesian *individual and the untouchable societal structure*.
- Individual could no longer be understood without his or her **cultural means**
- Society could no longer be understood without the **agency of individuals who use and produce artifacts**.

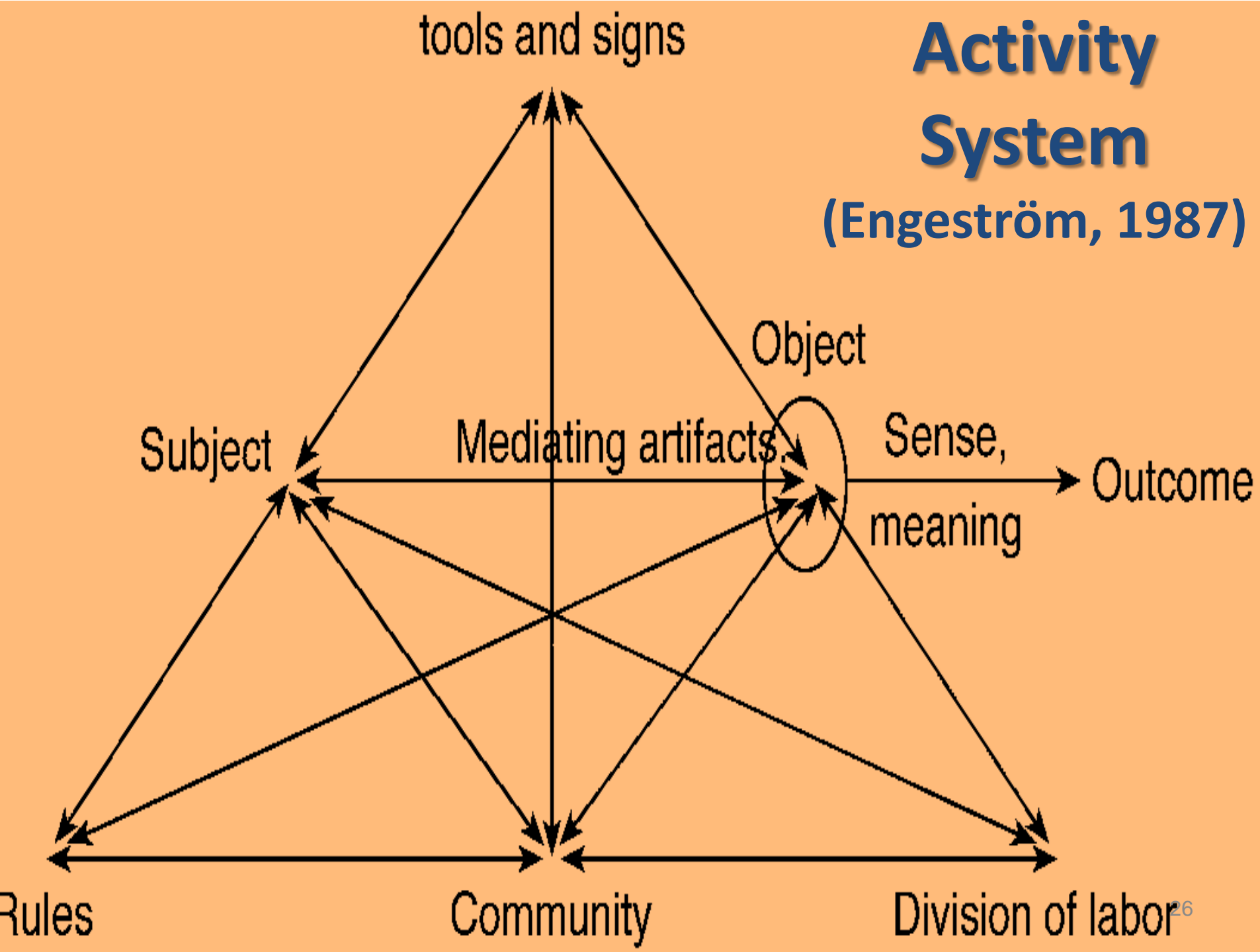
“We felt a huge vacuum- management trying to force teachers in some direction so as to show that they are doing something. **In the name of dialogue there is no scope for dialogue.**”



A problem that is brought up by a teacher, remains to that teacher, remains his or her prerogative.”

Activity System

(Engeström, 1987)



Activity Theory

- **Rules** – norms, conventions and regulations that are both explicit and implicit and which condition, restrict and regulate all the actions and interactions
- **Community** – brings together a large and varied number of individuals organized to share in the same object
- **Division of Labor** – dividing tasks among members of community, to ensure participants understand their roles and their field of action, particularly in their relationships with others, with the artefacts and with the object.

T1: Look, the students were obviously not making sense and were struggling.

T2: But reality is, there really can't be a perfect solution. We agreed we don't want to do lesson study for show right? But this is what happens in class all the time. We are fighting for time to complete the syllabus.

T1: How sure are you that the students are learning the content?

T2: They can learn from one another. Maybe we can provide more practice questions so they have more time to practice and revise at home....

T3: Wait.... You are both correct. But this class is sec 2 and that is all they should know. By sec 3, they will then understand all the concepts. Can we move on?



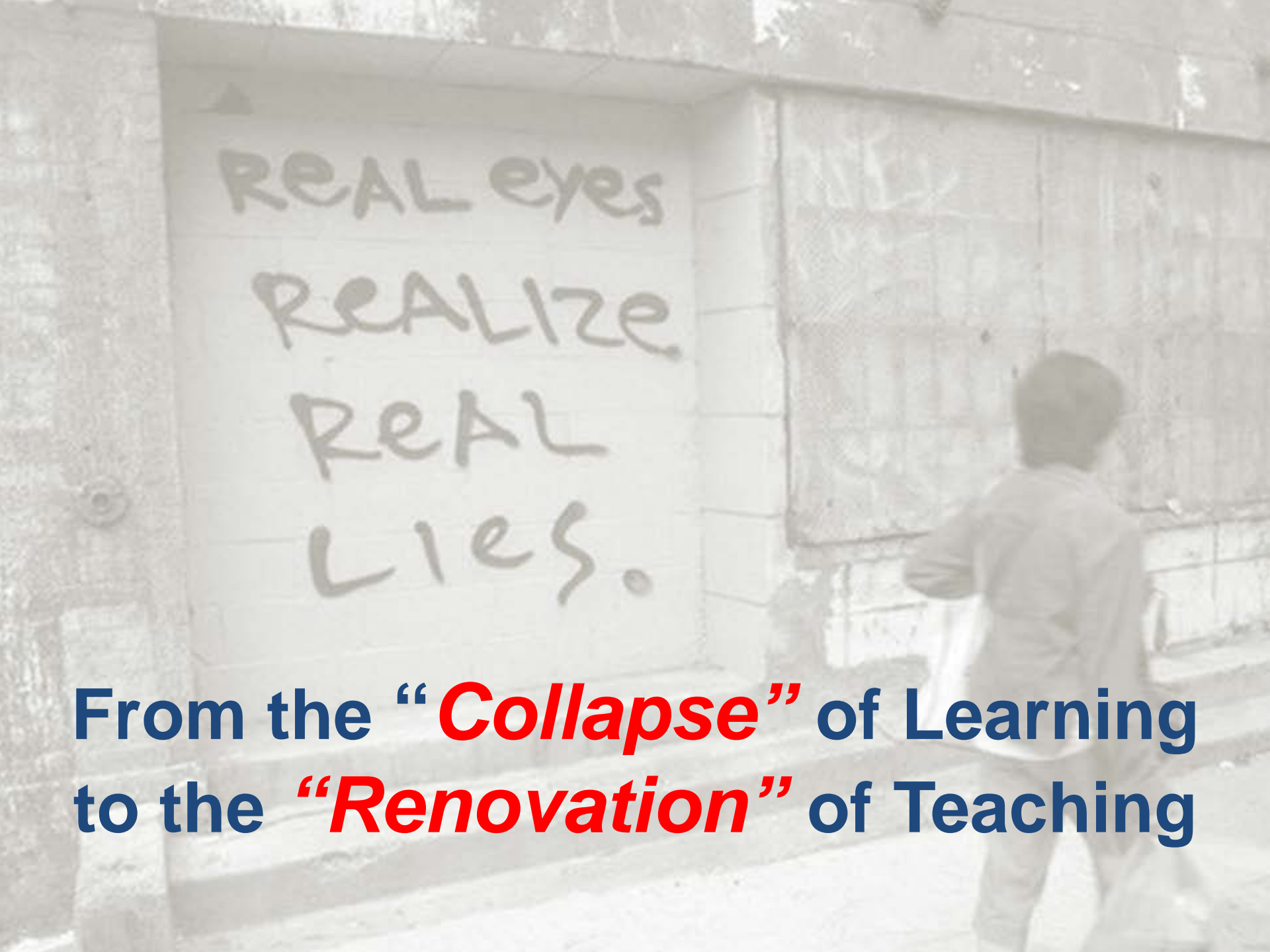
The backdrop of being a ‘performativity’ education system where the focus is on efficiency, accountability and outcome driven, can undermined the intent.

(Tan, Macdonald and Rossie, 2009)

“Is pedagogy only about improving instructional techniques?”

I think we need to see **teaching connected to broader questions** about the education of students for a better society.”



A person is walking from right to left in the foreground, slightly out of focus. They are wearing a dark jacket and carrying a white bag. In the background, there is a light-colored wall with graffiti. The graffiti reads "REAL eyes REALIZE REAL LIES." in a stylized, hand-painted font. The word "eyes" is in lowercase and script, while the others are in uppercase and block letters. There is also some faint, illegible graffiti to the right of the main text.

REAL eyes
REALIZE
REAL
LIES.

From the “***Collapse***” of Learning
to the “***Renovation***” of Teaching

21 Century Competency framework

(Ministry of Education,
Singapore)



21CC: Critical and Inventive Thinking

Standards and Benchmarks for the 21st Century Competencies (Draft correct as at 29 Apr 2011) Critical and Inventive Thinking

Learning Outcome

Generates novel ideas; exercises sound reasoning and reflective thinking to make good decisions; and manages complexities and ambiguities.

| Standards | Benchmarks | | | | |
|---|---|--|---|---|-------------------|
| | By end of P3 | By end of P6 | By end of S2 | By end of S4/S5 | By end of JC2/PU3 |
| CIT 1 Explores possibilities and generates ideas | 1.1a The student is able to generate ideas to respond to an issue/ challenge. | 1.1b The student is able to generate ideas and explore different pathways to respond to an issue/ challenge. | 1.1c The student is able to generate ideas and explore different pathways that are appropriate for responding to an issue/ challenge. | 1.1d The student is able to generate ideas and explore different pathways that lead to solutions. | |
| | 2.1a The student is able to explain his/ her reasoning and decisions. | 2.1b The student is able to use evidence to explain his/ her reasoning and decisions. | 2.1c The student is able to use evidence and adopt different viewpoints to explain his/ her reasoning and decisions. | 2.1d The student is able to use evidence and adopt different viewpoints to explain his/ her reasoning and decisions, having considered the implications of the relationship among different viewpoints. | |
| | 2.2a The student is able to recount relevant experiences which he/ she has learnt from. | 2.2b The student is able to reflect on his/ her thoughts, attitudes, behaviour and actions during the learning experiences and determine the modifications required. | | 2.2d The student is able to suspend judgement, reassess conclusions and consider alternatives to refine his/ her thoughts, attitudes, behaviour and actions. | |
| CIT 2 Exercises sound reasoning and decision making | 3.1a The student is able to identify the expectations of the task/ role and stay focused on them. | 3.1b The student is able to identify essential elements of multiple tasks/ roles, stay focused on them and persevere when he/ she encounters difficulties and unexpected challenges. | | 3.1d The student is able to identify essential elements of complex tasks, stay focused on them, take on diverse roles and persevere when they encounter difficulties and unexpected challenges. | |
| | | 3.2b The student is able to accept different perspectives, solutions and/ or methods, even in the face of uncertainty. | | 3.2d The student is able to manage uncertainty and adapt to diverse demands and challenges in new and unfamiliar contexts. | |
| CIT 3 Manages complexities and ambiguities | | | | | |

The “*Collapse*” of Learning

- **Research Theme:** Assessment for Learning (AfL) - To develop higher-order thinking skills through cooperative learning strategies in Science
- **Research Hypothesis:** Developing higher-order thinking skills through the use of cooperative learning strategies will raise students' performance in Science

The “*Collapse*” of Learning

- **Research Theme:** Assessment for Learning (AfL) - To develop higher-order thinking skills through cooperative learning strategies in Science
- **Research Hypothesis:** Developing higher-order thinking skills through the use of cooperative learning strategies will raise students' performance in Science

SO WHAT??

The “*Collapse*” of Learning

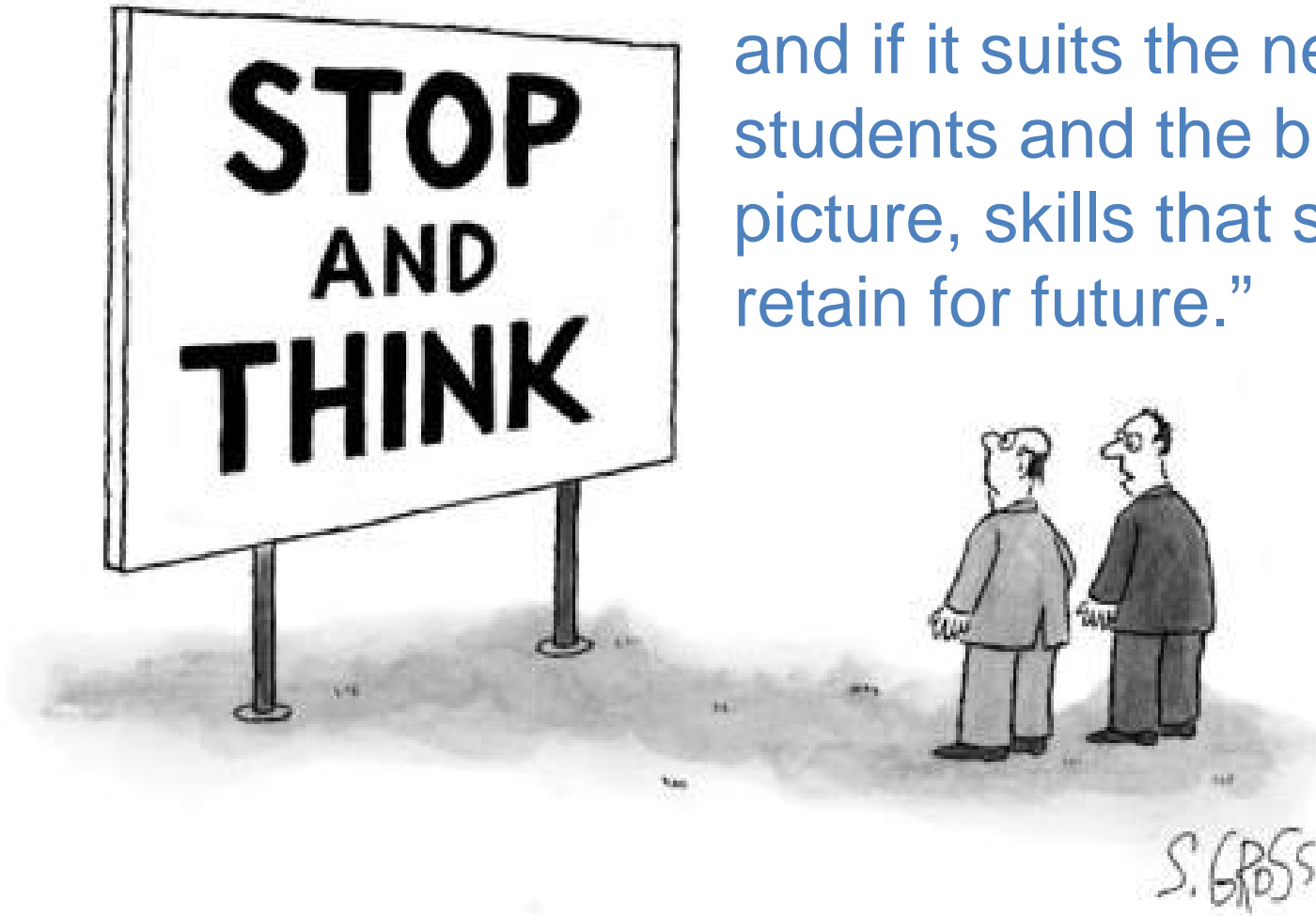
3. Students’ Prior Knowledge

- Explain physical and chemical digestion.
- Describe the digestive processes that take place in the mouth, oesophagus and stomach.

4. Lesson Objectives

- Explain the role of bile in physical digestion of fats.
- Explain the importance of physical digestion of fats.

“I feel that we **need to a pause and think** where all these leads to at the end of the day and if it suits the needs of the students and the bigger picture, skills that students will retain for future.”



Why do we need to be role models? → We need to set a good example
Why do we need to exert a positive influence on the team?
→ to lead the team towards the shared vision

Why do we want to model the way as CLs? Trs look up to us as role models

How might we model the way as CLs?

We need to know what to model

How do we decide which way to model?

We need to have a clear understanding how to reach out to the team

How to have a clear understanding of team members' needs?

profiles, needs, strengths, weaknesses

HMW clarify

Why the need for CLs?

Someone is needed to set direction for curriculum.

Why is there a need to set direction?

To work cohesively towards a common goal.

Why must adults be the CLs?

The “*Renovation*” of Teaching

- First begin with the tools with using the classroom interactions to **discover authentic relations** which prompt changes in the relationship
 - **Between the subjects** (*the relationship between the teacher and the students*)
 - **Prompt changes in the subject themselves** (*changes in teacher’s and students’ roles*)

The “*Renovation*” of Teaching

Stages in practical discourse shared by teachers:

- ① How to teach for inquiry in science?
- ② How to teach children to inquire?
- ③ How to teach children to learn doing inquiry?
- ④ How to learn to teach children to learn by doing inquiry?

The “*Renovation*” of Teaching

- Teachers’ classroom practices shifted from associationistic views of learning to embracing constructivism
- Teachers take collective responsibility for learning linked to self-regulated learning, metacognition and social learning

Illuminate the students' voice

- Create open channels to design for teachers themselves to become **agents** to change the learning ecology in the classroom
- Agency of teachers and students, both as individuals and as groups within the classroom can have a substantial impact on what the 'world of that classroom' looks like (the structure).
- Primary interest is also in the changes that occurred in teachers' practices, and in their classrooms (the environments), than in continuities and stabilities.

What did I learn yesterday?


- *“Tipping point”*- point at which a trend catches fire – spreading exponentially through the population
- For good or bad, change can be promoted rather easily in a social system through a domino effect.

"I think, till date a comfort zone between teachers and parents has not been well established. Still there are **fears lingering over parents' involvement**. So this could either be a stumbling block that kind of locks their participation in LS."



If I see the other way round, through LSLC, a connection can be built between parents and teachers and hence, open up this zone for betterment of education and schooling.”





The key goal of my ministry is to bring out the best in every child. In every domain of learning; in every school; at every stage of the learning journey; whatever the starting point; to create a better future together.

**Minister Heng Swee Kiat
@Parliament Debates 07 March 2014**

Thank you
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