

## Some results of implementing the Lesson Study by chemistry teachers of Bayangol District

Jargalsaikhan **ENEBISH**, School No113

Choiijilsuren **NYAMGEREL**, NUM,  
Chemistry and Chemical Engineering School

## MONGOLIA



Area: 1,564,115.75 km<sup>2</sup> ([19th](#))

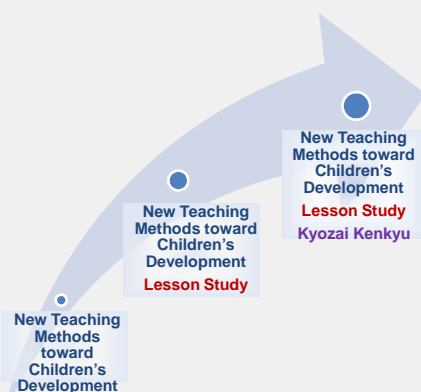
Population: 2,754,685 (2010 census)

Density: 1.76/km<sup>2</sup> ([236th](#))

## JICA's project on Lesson Study in Mongolia

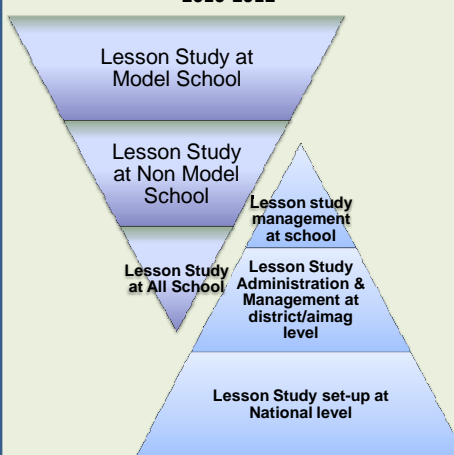
### Teaching Methods Improvement Project toward Children's Development in Mongolia

2006-2009

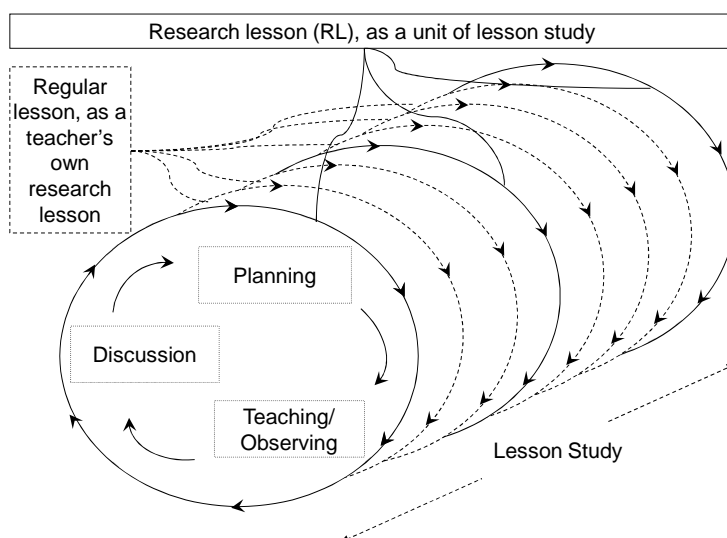


### Strengthening of Systems for Improving and Disseminating of Child-Centered Teaching Methods in Mongolia

2010-2012



## Lesson Study and Research Lesson



## Chemistry Lesson Study in Bayangol district

**Bayangol: Non-Model district**

No	District Schools	Team member		
1	Complex School “Mongen”	G.Ankhzaya	Participated continuously	
2	Complex School “Erdmiin urguu”	N.Nandin		
3	School No 13	G.Zolzaya		
4	School No 20	Z.Altantuya		
5	School No 28	G.Khorolsuren		
6	School No 40	N.Otgonjargal		
7	School No 46	S.Oyunchimeg		
8	School No 47	D.Aasuren		
9	School No 51	D.Doljinsuren		
10	School No 73	D.Munkhjargal		
11	School No 113	J.Enebish	Participated insufficiently	
12		S.Altangerel		
13	School No 19	M.Oyunbileg		
14	School No 38	T.Chantsaldulam		
15	Complex School “Erdmiin Undraa”	G.Sarantsetseg		
16		N.Boljinnyam		
17	School No 93	Not participated		
18	Complex School “Oyunii Undraa”			

•88% or 14 state-owned schools out of 16 district schools

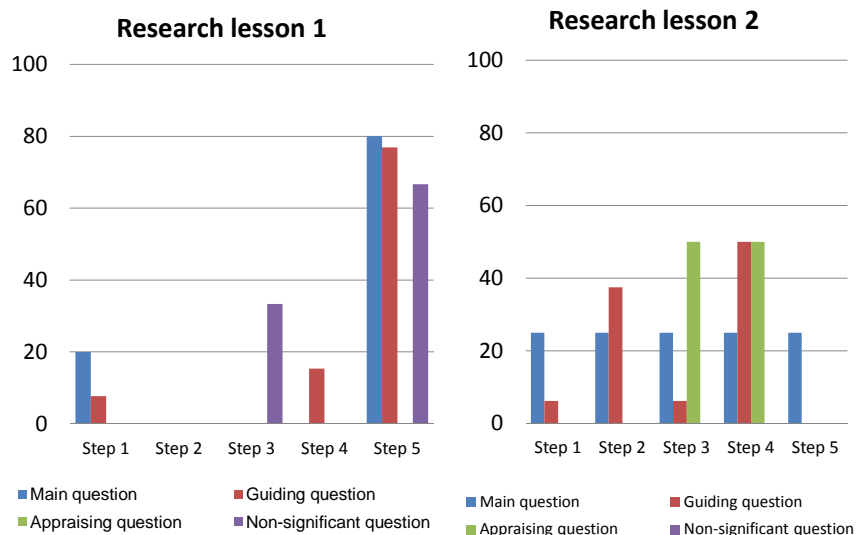
• 53% or 16 teachers out of 30 teachers

## Chemistry Lesson Study in Bayangol district

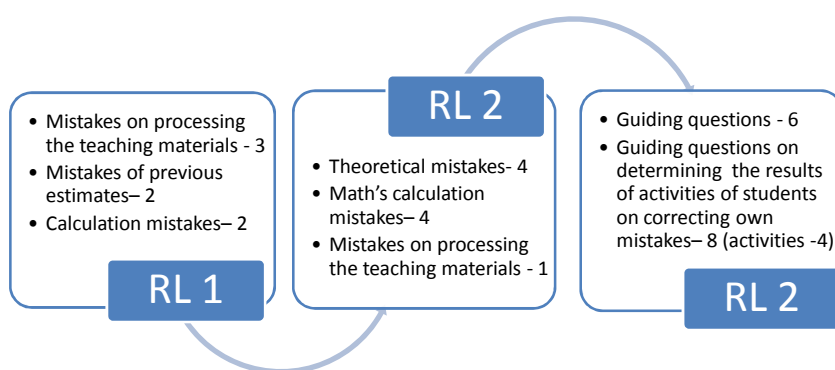
**LS purpose:** To improve abilities of students to work with information (using, comparing, transforming and processing)

Lessons	hr	work with information
<b>Components of an atom/chemical elements</b>	1 hr	Picture to Text (identify)
Relationship between components of an atom/chemical elements and periodic system	2 hrs	Picture to Text (find regularity)
a. To determine the relationship between components of an atom/chemical elements and periodic system b. To express the components of an atom/chemical elements by using chemical formula		Picture to/from Schema to/from Text (counting)
The electron arrangement of chemical elements a. To study the steps of explaining the electron arrangement of chemical elements by using the diagram b. To explain the electron arrangement of chemical elements by using the diagram /according to steps/	2 hrs	Text to schema (define steps)
To identify the stable and non-stable arrangement of valence electron	1 hr	Picture to Text
The electro negativity of chemical elements a. Regularity of the electro negativity of chemical elements in accordance with periodic system. b. To determine the metallic and non-metallic properties of chemical elements, based on their electro negativity	2 hrs	Table to Text (find regularity)
		Periodic Table Data to Text
<b>Atomic charge of chemical elements</b>	2 hrs	Picture to Counting to text

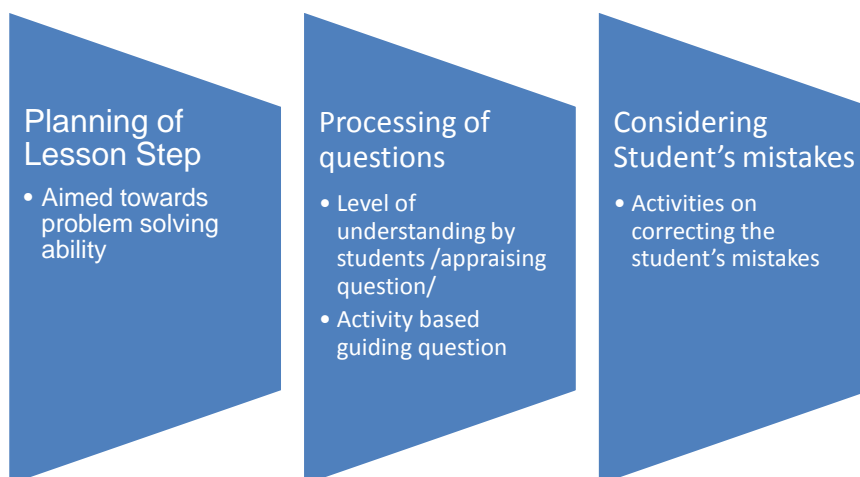
## Results of analysis of lesson plan's questions



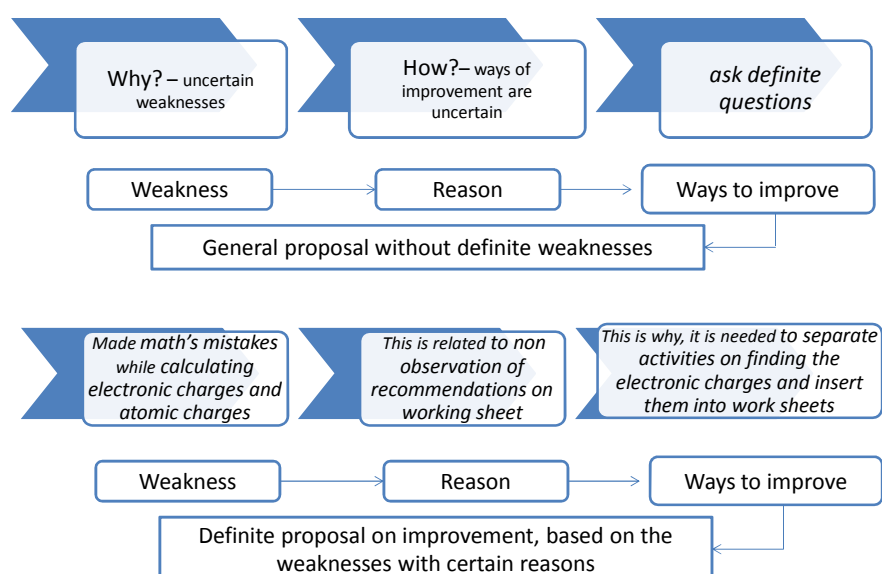
## Planning of didactic solutions on correcting the student's mistakes



## Changes in lesson planning skills of teachers



## The methodology of analysis of discussion minutes



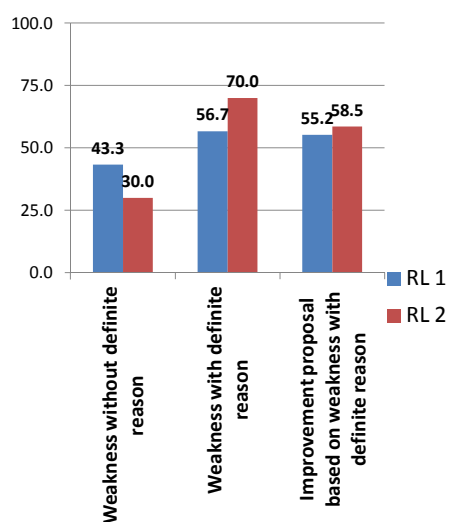
## Result of Analysis of discussion minutes

Improvement proposal  Weakness		Without definite way of improvement	With definite way of improvement	General proposal
Without definite reason	RL 1 (13)	5	0	2
	RL 2 (6)	4	0	1
With definite reason	RL 1 (17)	0	16	4
	RL 2 (14)	0	14	0
Without definite weakness	RL 1	0	0	2
	RL 2	0	0	5

Weakness:                      Improvement proposal:

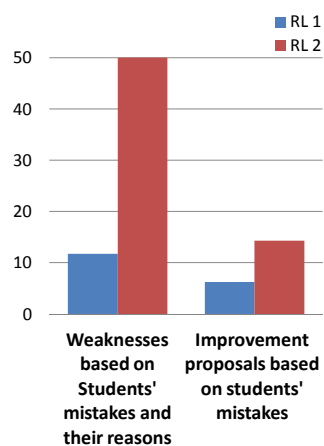
RL 1 (30)                      RL 1 (29)

RL 2 (20)                      RL 2 (24)

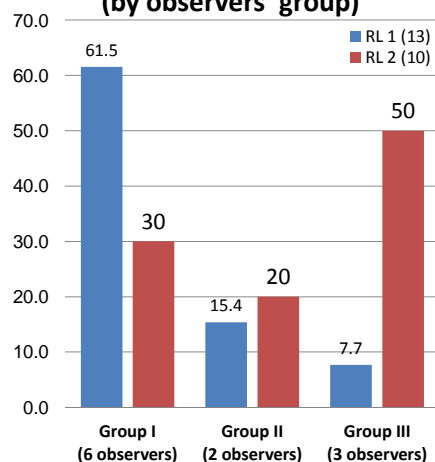


## Changes in observation skills of teachers

### Improvement proposals suggested based on the mistakes of students



### Percentage of Improvement proposals without definite ways (by observers' group)



## Conclusion

- Teachers are starting to plan the didactic solutions on predicting and correction of students' mistakes and the questions on determining and appraising of understanding levels of students.
- The students' abilities to work with information (observation, comparison, determination of regularities, definition of differences) are improving and they are able to make well founded expression of own ideologies in full sentences (by opinions of observers).
- The observers are monitoring the mistakes made during the process of students learning, determining the weaknesses of lessons and their reasons, based on the results of observation and coming out with well grounded improvement proposals. However, the activities on determining the reasons of student's mistakes and reflecting them in the improvement of a lesson plan are not performed sufficiently.

## Future activities

On improving the quality of Lesson studies:

- To enhance the teacher's abilities on improving the Lesson plans, based on identification of mistakes of students and teachers and their reasons
- To develop the observation abilities of teachers
- And etc.