




**IMPULS-QU**  
**lesson study project**

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**Population 2018**  
**2,694,849**

**2017 report**  
**87 different**  
**Nationalities**  
**living in Qatar.**




**About the Project**

- The project IMPULS, International Math-teacher Professionalization Using Lesson Study.
- Collaborative work between Tokyo Gakugei University and Qatar University, College of Education (NCED).
- An innovative project aimed to establish a robust organizational improvement model of professional development in Qatar schools.




**About the Project**

- 3-7 years project for fostering Problem solving and reasoning by using teaching through problem solving
- This is a teacher research project under the following research theme

**“Fostering students’ ability for problem solving and reasoning by using Teaching through Problem Solving (TtPS)”**

**Project Goals**

- Increase the number of students who are motivated to learn at a higher level of mathematics
- Develop strong skills of reasoning and problem solving for the students.

**Project Significance**

- Qatar was ranked as 62 out of 65 country shared in the latest results of the Program for International Assessment (PISA)
- 70% of students in Qatar were considered to be low achievers in Math according to PISA assessment.

**Project Significance**

- Decreasing in number of students in mathematics and science programs at Qatar University over the past decade.

Year	Biology	Chemistry	Physics	Math
1998	450	400	150	250
1999	550	450	180	300
2000	450	350	150	250
2001	400	300	120	200
2002	350	250	100	180
2003	300	200	80	150
2004	250	150	60	120
2005	200	100	40	80
2006	150	80	30	60
2007	120	60	20	40
2008	100	50	15	30
2009	80	40	10	20
2010	70	30	8	15
2011	60	20	5	10

Figure 1: Enrollment in mathematics and science programs at Qatar University (1998-2011)  
Reprint of (Said & Friesen, 2013, p. 624)

**Project Significance**

- Number of Qatari students who choose to pursue science in secondary schools has been declining significantly

Year	Arts	Sciences
1991	1000	500
1992	1100	600
1993	1200	700
1994	1300	800
1995	1400	900
1996	1500	1000
1997	1600	1100
1998	1700	1200
1999	1800	1300
2000	1900	1400
2001	2000	1500
2002	2100	1600
2003	2200	1700
2004	2300	1800
2005	2400	1900
2006	2200	1700
2007	2000	1500

Figure 2: Grade 12 science and art enrollment in Qatar (1991-2007) reprint of (Said & Friesen, 2013, p. 623)

**Phase 1 (year 1)**

- Nurturing Qatar University's content specialists (PDS's) in becoming leaders in Lesson Study
  - Observe the student learning process effectively
  - Design lessons to address student needs based on these observations.



**Phase 2 (year 2-3)**

- ☐ Train teachers in selected schools to:
  - Design research lesson plans.
  - Conduct lesson plans based on projects' requirements.
  - Evaluate students' performance.
  - Reflect on their performance.
- ☐ Supervise work on project in the selected schools



**Phase 3 (year 4-7)**

Increase the number of participated schools

**Year 2017-2018**  
4 new schools joined the project  
(total = 8 schools)

**Year 2018-2019**  
2 schools planned to join  
(Total = 10 schools)



**The Program Through The Years**

	Year 1 2014-2015	Year 2 2015-2016	Year 3 2016-2017	Year 4 2017-2018
# of lessons presented	16	16	16	14
# of teachers presented	4	16	16	14
# of students	80	240	300	330
# of participants observed lessons	9	50	150	200

Two open days were conducted



## Data Collection

- **Pre-test:** students from grade 4 to grade 8 in four schools.
- **Teachers Belief Questionnaire:** teachers and PDSs.
- **Lesson Plans:** PDSs and teachers.
- **Lesson notes:** using LessonNote Application.
- **Students' works.**
- **Post-discussion notes:** Participants.
- **Daily reflections:** Participants.



## Progress Achieved

**General endorsement of CLR proved its success.**

- Majority of QU specialists changed their beliefs regarding teaching approaches.
- Improvements were made by QU specialists to help teachers step out of their comfort zone.
- Observation process become more focused on students' performance

(CLR) = Collaborative Lesson Research



## Progress Achieved

- Engaging more students in the class.
- Quality of classroom questions and discussions
- Giving clear instructions.
- Thoughtful planning to accommodate students' needs.
- Teachers' self reflection.
- Students' achievement in problem solving.



## Challenges

- Resisting change
- Turn over in schools
- Provided support in schools
- Shortage in resources in Arabic Language
- Available Time on teachers' schedules

