

gPBL for Solving Problems in Surabaya City using Mathematical Sciences

Implementation period	Implementing country	SIT's implementation partner organization	Target students	participant	SIT instructor
2019/08/19 ~2019/08/31	Indonesia	Institut Teknologi Sepuluh Nopember	<ul style="list-style-type: none"> Department of Mathematical Sciences Undergraduate 2nd grade、Undergraduate 3rd grade、Undergraduate 4th grade 	(SIT) Students 19, TA 2, Professor 2 (Institut Teknologi Sepuluh Nopember) Students 20, TA 50, Professor 5, Staff 2	aihara akiko(Department of Mathematical Sciences), nakatsu tomonori(Department of Mathematical Sciences)



Image1 Group photo

We carried out the 1st global PBL (Project Based Learning) program for students of Institut Teknologi Sepuluh Nopember (ITS), Indonesia, and Department of Mathematical Sciences, SIT, Japan. There was cooperation from the city of Surabaya regarding the issues of this gPBL, and the mayor of Surabaya explained the current situation regarding the market of the city. In the group work by a mixed team of SIT and ITS students, by visiting several markets to survey prices or giving interview to city representative or stuff, they proposed a solution to the problem based on the mathematical approach to price fluctuations of nine important items, such as chili, in the market or the optimal placement problem of trash bins and garbage disposal sites. In the latter group work, at first, Prof Nakatsu explained the definition and some mathematical properties of some statistical indices. The theme of the group work is to find new indices. In the final presentation, each groups suggested new and original indices and investigate their mathematical properties and give some numerical experiments. Intercultural exchanges such as traditional Indonesian music and dance, Indonesian martial arts and field trips were also held, and the participating students could gain a global perspective and communication skills.



Image2 With Surabaya City Mayor



Image3 Lecture of ITS Prof.



Image4 Discussion



Image5 With Surabaya City Staff



Image6 Indonesian traditional dance



Image7 Field trip