

# Effect of Globalization on Learning Science

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## **EFFECT OF GLOBALIZATION ON LEARNING SCIENCE IN THE DISTRICT SMPN OF BANTUL**

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### **Abstract**

Globalization has a significant impact on the world, including in education. Globalization of education should be able to invite students to actively think of new ideas and skilled. But in reality, the current study it is still not able to meet these demands. Learning science is a discovery proves that already exist or learn what is in the book, without linking it to life. The impact of the emerging form of the low quality of education in Indonesia. For this reason it is considered very necessary to prepare authentic inquiry learning tools to develop creative thinking skills and scientific process .

This study aims to provide an overview of the impact of globalization on science learning, particularly in the area of Bantul. The study was conducted using a survey method . Data on the quality and potential of learning tools that can develop creative thinking skills and scientific process was collected through test, interviews and questionnaires by using observation sheets, reviews, and questionnaires. Meanwhile, the data were analyzed with descriptive and correlational analysis .

The results showed that the school institutions and learning of science SMP N in Bantul can be classified in two category of globalization effects are high effect and middle effect. Scientific process skills in Bantul various score from 51.67 to 89.17. Students' creativity thinking skills SMP in Bantul was still low. There is a correlation between the effect of globalization on the school institution with the learning of science. There is not correlation between the effect of thinking skills. There is not correlation between the effect of globalization on the learning of science with the scientific process skills and students creativity thinking skills. There is a correlation between scientific process skill and students creativity thinking skills. Potensi learning community around the school for a science learning activities , industries, certain professions. Another potential is available with complete media, school yard and garden, pod, dry land and field are easily accessible by teachers and students .

**Keywords :** *globalization, science learning, creative thinking, scientific process skills .*

### **INTRODUCTION**

Globalization has made the world being small. The people can interact with others without space and time barriers. Nevertheless, the world faces increasing poverty, violence, and destruction of the environment. It is a need to link globalisation and justice in all fields. National education policies and globalization must harmonies.

Globalization characterized by ambivalensi. It is like a gift, but in the other side, it is like a curse. It is like happiness, but in the other side, it is like pains. The characteristic of ambivalensi in globalization are the central matters. In these side, there is a locus problematicus which has a big challenge to education. The characters of ambivalensi globalization in education are:

- 1) Globalization presents the charm of speed would be contrary to the problem ' of knowledge understanding on students
- 2) Globalization is give a benefit to who think and act fastly and unfortunately for one who think and act slowly.

- 3) Globalization makes it easy to create relationships and overcome the distance the region but there is insensibility on the roots and characteristics of local culture.
- 4) Globalization will bring up the potential to resolve problems rapidly on a global scale but be a burden the vastness of scope on the cause of the problem.

These problematics will be characterized the globalization whenever. The teachers have obligation in the school institution is not negating the dilemma, but prepares and protege to live in globalization.

The challenge of the future demands learning creative thinking and high order thinking. The Era of globalization, environmental problems, and advances in information technology is an issue that must be faced in the future. Investment and transformation in education sector is the problem must be solved. The student have to some competency to facing the problem in the future. So, it needed study which can various soft skills, for example: communication in the global society, readiness for work, perspicacity to the trace, general responsibility to the environmental, and consider in moral side in the problematics.

Learning of science ought to student actively and think dynamicly. But unhapilly, still met focussed study is ready answers and not yed questioned the way of obtaining answers. The learning of science with delivery system and teacher centre still meet. Student activity is more listen clarification and note important information from teacher. Teacher explain only limited product science and afew scientific process. One of the cause is items denseness which must be studied and finished based on the 2013 curriculum and there is no model, example, and study materials supporting. is just for the product of science and is few of teacher who develop process of science.

Learning of science ideally train students to thinking, formulating concepts, collecting data through observation and experiment in science learning at the school. These things is a reflection of meaningful science learning. National Research Council (1996: 20) said that "Learning science is an active process. Learning science is something student to do, not something that is done to them".

Learning science is supposed to be carried out, as the essence of science who is orientated to process science. So, the student's have science process skill. But things are different with the reality on the site that is still constrained to realize idealita. Ironically, most of the learning takes place in classrooms is still oriented in an effort to develop and test the students' memory. So, students thinking ability are reduced and simply understood as the ability to remember. In addition, it would also result in stunted and disempowered students encountering problems that demand thought and creative problem solving.

The condition of Indonesian education quality experience a low quality in reality. The low quality in Indonesian education can be representative by research from two institute who care about education in Indonesia. First, the research that doing in Paramadina University Jakarta as a nasional education institute that showed the quality education in Indonesia occupied the 10<sup>th</sup> rank from the bottom (rank 102 from 104 countries). Second, the research that doing in *Organization for Economic Co-operation and Development (OECD)* as an International research institute showed that education in Indonesia is at least the second order after Tunisia for problem solving and competency is at the bottom of the third after Brazil for competence in science (Munif Chatib, 2011: 22). The result is certainly apprehensive. The reasons can be input how should Indonesia human resources developed through education.

Despite the poor quality of education in Indonesia, but we must not be pessimistic. Thus the research data of the two institutions mentioned above should be a trigger to work more creatively and intelligently. One of his efforts is to improve the quality of learning implemented in innovative and creative, it is by implemented the authentic inquiry learning.

Based on explanation above, it is a challenge and a great opportunity to do research that provides a learning tool to develop creative thinking and scientific process skills of students.

Learning by approach authentic inquiry learning is very important to develop. Through the concept of the learning, the students is invited closer to the problems around the environment and observe the biological object so it can be created by the high quality of learning. It is an opportunity to develop a learning devices with authentic inquiry learning approaches to increase creative thinking and scientific process skills for students.

#### **Research Object**

1. Clasification the Junior High School in Bantul regency based on the effect of globalization in learning education.
2. Indentificaion the potential of society around the school to optimalization the learning science through the inquiry learning.
3. Describing the creative thinking ability of Junior High School students in the Bantul regency based of classification of globalization impact.
4. Describing the scientific process skills ability the Junior High School student in Bantul Regency based on classification of globalization impact.

#### **RESEARCH METHOD**

##### **Research Design**

This research is exsplorative research to express the impact of globalization to school institution and learning science, scientific process skills of student, and student creatifity.

##### **Research Instrument**

The research instrument that used in this reasearh is questionnaire to headmaster, questionnaire to science teacher, test scientific process skill and student creative thingking. Instrument validation is validating as a teoritic and empiric with expert judgment.

##### **Population and sample**

Population: 47 Junior High School in bantul regency.

Sampel: 18 Junior High School in bantul regency.

Sampling technic: Purposive sampling.

##### **Research Procedure**

1. Clasifying the Junior High School in Bantul regency based on the effect of globalization in learning education.
2. Indentifying the potential of society around the school to optimalization the learning science through the inquiry learning.
3. Describing the creative thinking ability of Junior High School students in the Bantul regency based of classification of globalization impact.
4. Describing the scientific process skills ability the Junior High School student in Bantul Regency based on classification of globalization impact.

##### **Collecting Data**

Research data are effect of globalization to school institution, effect of globalization to learning of science, ability of scientific process skills, and ability of creative thinking skills. Data of effect of globalization to school institution and learning of science are collected with qestionare. Where as data of ability of scientific process skills and creative thinking skills are collected by tes.

**Data analyzing**

Research data is analyzed as descriptive and inferention with correlation.

**RESULT AND DISCUSION****A. The Effect of Globalization to School Institution.**

The result of this research is known that the effect of globalization to school institution is divided into two effect that is high and middle. The effect of globalization to the school can be seen on the following Table 2.

Table 2. the effect of globalization to school institution.

No.	School	Score globalization to School Institution	Criteria
1	SMP A	23	High Effect
2	SMP B	21	High Effect
3	SMP C	19	Middle Effect
4	SMP D	19	Middle Effect
5	SMP E	26	High Effect
6	SMP F	20	Middle Effect
7	SMP G	20	Middle Effect
8	SMP H	18	Middle Effect
9	SMP I	25	High Effect
10	SMP J	21	High Effect
11	SMP K	17	Middle Effect
12	SMP L	16	Middle Effect
13	SMP M	22	High Effect
14	SMP N	16	Middle Effect
15	SMP O	23	High Effect
16	SMP P	16	Middle Effect
17	SMP Q	18	Middle Effect
18	SMP R	15	Middle Effect

Note:

Score 1-10 : low effect  
 11-20 : middle effect  
 21-30 (maximum score) : high effect

Based on table 2 there are 7 school affected by high effect and 11 school affected by middle effect. The school with high effect is not just in central of Bantul Regency, but it is randomly in the rural and mountain area in Bantul. SMP E which is the highest effect located far away from the central of Bantul regency; SMP I is the second high effect located in mountain area. Meanwhile, SMP R which is the lowest effect located verge with the central of the city and SMP L which is the second low effect located in the middle of Bantul regency.

**B. The Effect of Globalization to Learning of Science**

The effect of globalization to learning of science is divided into two, it are the low effect and high effect. For more information can be seen on the following Table 3.

Table 3. The effect of globalization to learning of science.

No.	School	Score Globalization to Learning of Science	Criteria
1	SMP A	159,33	High Effect
2	SMP B	159	High Effect
3	SMP C	139,67	Middle Effect
4	SMP D	138,67	Middle Effect
5	SMP E	160	High Effect
6	SMP F	147	Middle Effect
7	SMP G	157,33	High Effect
8	SMP H	127,33	Middle Effect
9	SMP I	154,33	High Effect
10	SMP J	157	High Effect
11	SMP K	148	Middle Effect
12	SMP L	147,33	Middle Effect
13	SMP M	117,33	Middle Effect
14	SMP N	134,33	Middle Effect
15	SMP O	147,33	Middle Effect
16	SMP P	137,5	Middle Effect
17	SMP Q	129	Middle Effect
18	SMP R	122	Middle Effect

Note's:

Score: 1-75 : low effect  
 76-150 : middle effect  
 151-225 (maximum score) : high effect

Based on table 3 showed that the effect of globalization to learning science in Bantul can be divided into two criteria, it are the high effect and middle effect. The high effect can be seen in 6 school, while the middle effect can be seen in 12 school.

The relation between effects of school institution with the effect of globalization to learning science can be seen on table 4.

Tabel 4. Hasil Uji Korelasi Institusi Sekolah dengan Pembelajaran Sains

		Institusi Sekolah	Pembelajaran Sains
Institusi Sekolah	Pearson Correlation	.582*	.582*
	Sig. (2-tailed)	.011	.011
	N	18	18
Pembelajaran Sains	Pearson Correlation	.582*	.582*
	Sig. (2-tailed)	.011	.011
	N	18	18

\*. Correlation is significant at the 0.05 level (2-tailed).

Based on table 4 above can be known the score probability to 2 tailed is 0,11. This score probability  $< 0,05$ . So, if there is a correlation between the effects of globalization to school institution with the effect of globalization to learning science. The coefficient correlation is 0,582. This fact showed that the effect of globalization to school institution with the effect of globalization to learning science is in high effect. It means the school affected globalization is high effect also affected science learning in high effect.

### C. Description of Student's Scientific Process Skills

Globalization also affects the students' scientific process skills. For detail information, it could be seen on the following Table 5.

Table 5. Student's scientific process skills

No.	School	Score Average	MODUS	STDEV
1	SMP A	54,33	60	10,64581
2	SMP B	53,67	60	10,662
3	SMP C	61,72	65	10,11327
4	SMP D	60,52	55	9,097177
5	SMP E	78,67	80	6,814454
6	SMP F	77,78	85	12,35168
7	SMP H	58,33	60	8,022956
8	SMP I	59,48	65	8,797811
9	SMP G	70,22	65	13,60801
10	SMP L	56,25	50	10,68271
11	SMP M	51,67	60	13,54006
12	SMP K	51,67	45	10,69429
13	SMP N	57,17	65	14,36491
14	SMP O	59,44	65	9,640992
15	SMP P	89,17	90	6,308633
16	SMP Q	56,5	60	16,92529

Description:

Yellow color: schools institutions and learning of science affected high effect.

The color green: learning of science affected high effect

Based on Table 5 above. Five highest scientific process skills are SMP P, SMP E, SMP F, SMP G, and SMP C. Based on the Table 5 that five highest scientific process skills is

not all of high effect globalization in institution and learning of science. The highest value of scientific process skill is SMP P which being middle effect globalization both the institution and learning of science. Only one school affected high effect globalization is SMP E. In addition, it appears that another schools affected strong, the scientific value is quite low, all value under of 60.

**Table 6. Institutional Relationship Between Scientific Process Skills Schools with Students**

		Institusi Sekolah	Scientific Process Skills
Institusi Sekolah	Pearson Correlation	.025	1
	Sig. (2-tailed)	.928	
	N	18	16
	Scientific Process Skill		
Scientific Process Skill	Pearson Correlation	.025	1
	Sig. (2-tailed)	.928	
	N	16	16

Based on the results of the correlation table above is known probability value (Sig. (2-tailed)) of 0.928. This value > 0.05 which indicates there is no relationship between the impact of globalization on school institutions with scientific process skills of students. While the relationship between science learning by students about scientific process skills are presented in Table 7.

**Table 7 Relationship Between Scientific Learning Science Process Skills with Students**

		Pembelajaran Sains	Scientific Process Skill
Pembelajaran Sains	Pearson Correlation	.243	1
	Sig. (2-tailed)	.365	
	N	18	16
	Scientific Process Skill		
Scientific Process Skill	Pearson Correlation	.243	1
	Sig. (2-tailed)	.365	
	N	16	16

Table 7. indicated that the probability value (sig. (2-tailed)) of 0.365. This value > 0.05 indicates no relationship or correlation between the impact of globalization on science teaching with students' scientific process skills.

#### **D. Creative Thinking Skills**

The ability of creativity students are presented in Table Creative Thinking Skills



Students at Table 8.

Tabel 8. Ability of Student Creative Thinking Skills

NO.	School	Score Average	MODUS	STDEV
1	SMP A	26,59	29	8,70
2	SMP B	24,67	24	9,03
3	SMP C	30,73	36	10,44
4	SMP D	32,87	31	7,21
5	SMP E	24,59	29	11,55
6	SMP F	43,05	53	16,19
7	SMP H	24,35	20	13,76
8	SMP I	13,85	18	5,56
9	SMP G	28,51	29	5,25
10	SMP L	12,96	16	4,49
11	SMP M	8,1	7	2,36
12	SMP K	8	4	3,33
13	SMP N	28,15	31	12,10
14	SMP O	30,53	29	7,46
15	SMP P	58,22	56	9,40
16	SMP Q	34,07	36	9,29

Description:

Yellow color: schools institutions and learning of science affected high effect

The green color: learning of science affected high effect

Based on Table 8 above throughout the school still has a weak of creativity. This is evident from the whole school averages below 60 (maximum score 100). The highest value of 58.22 achieved school with middle effect. While schools affected high effect get score maximum 30.53. The relationship between school institution with students' creativity and learning science with the creativity of students is presented in Tables 9 and 10.

**Table 9. Correlation Between School Institution and Student's Creativity**

		School Institution	Student's Creativity
School Institution	Pearson Correlation	1	-.078
	Sig. (2-tailed)		.775
	N	18	16
Student's Creativity	Pearson Correlation	-.078	1
	Sig. (2-tailed)	.775	
	N	16	16

**Table 10. Correlation Between School Institution and Student's Creativity**

		Science Teaching	Student's Creativity
Science Teaching	Pearson Correlation	1	.148
	Sig. (2-tailed)		.584
	N	18	16
Student's Creativity	Pearson Correlation	.148	1
	Sig. (2-tailed)	.584	
	N	16	16

Based on Tables 9 and 10 showed that unknown probability value (sig.2tailed) > 0.05. This shows there is no correlation between the creativity of the students of the school institution, as well as between students learning science with creativity. While the relationship between students' scientific process skills and creativity of students are shown in Table 11.

**Table 11. The Correlation Between Scientific Process Skills with Student's Creativity**

		Scientific Process Skill	Student's Creativity
Scientific Skill	Pearson Correlation	1	.713**
	Sig. (2-tailed)		.002
	N	16	16
Student's Creativity	Pearson Correlation	.713**	1
	Sig. (2-tailed)	.002	
	N	16	16

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Based on Table 11 known that value of probability (sig.2tailed) of 0.002. This suggests there is a correlation between students' scientific process skills and creativity of students. Furthermore, the correlation value of 0.713 indicated. This shows a very strong correlation.

#### **E. Characteristics of Potential Public School Around**

Schools have the potential for science learning both in school and in the neighborhood around the school. In addition, the potential is there in the form of learning objects and living beings symptoms, community and industry activities related to science, science-related professions. In addition, the school also has facilities and infrastructure for science learning in the form of lab, computer lab, LCD and laptop, parks and school gardens, etc.. Learn the potential of science teaching is presented in Table 12.

Table 12. The Local potential of Schools For Learning

No.	Potential	School Criteria	
		High Effect	Middle Effect
1.	Industrial activities	waste processing, composting,	Industry tempeh, tofu, tape,

	around the school that can be used for learning science	wood waste processing, industrial batik. Mushroom cultivation, fish, catfish, mina rice, and onion farming. There are industrial tempeh, tofu, nata de coco, and blacksmith business. other than that, there is a farm lab near school ..	nata de coco, nata de soya, bread company, catfish farming, composting, waste processing, mushroom cultivation, pemiitan, businesses germination (sprouts),
2.	Expertise of the community around the school that can be used for learning science	Vegetative propagation of plants (cuttings, etc.), organic fertilizer, tempe entrepreneurs, craftsmen batik, orderlies animals, artificial insemination, confectioner, salted fish, and fermentation, ceramics makers	Employers nata de coco, maker of bags of water hyacinth, maker of tofu, tempeh, and salted egg,
3.	Other skills in addition to teaching science teacher relating to learning science	Making sweets, grafting, making tempe, tape, straw fermented animal feed, mushroom cultivation, angrang, worms, free-range chickens	Husk charcoal, hydroponic growing media, composter, manufacture briquettes dry waste, waste management methods pilorisis
4.	Instructional media owned school	Charta, models, science kits, mechanical kit, kit optiktorsomikroskop, preparations preserved, CD learning, school environment, LCD, science lab, lab equipment, replica, herbarium,	Charta / images / charts, models, torso, specimen, measuring tools, LCD, school gardens, lab. IPA, school pages, multimedia labs, computers, lab equipment, school gardens, school grounds, OHP, CD, school gardens
5.	Science Laboratory Conditions	Science Lab. eligible for science learning activities. However, there is one junior high that the material has expired. Science lab appliances there are no scheduled with certainty but adapted to the material to be used every day. The mean usage in 1 week is 3 times.	Generally science Lab qualify, there is only 1 ½ school meets new states. Use of the lab. IPA on SMP this would mean almost every day 5 times a week with wear.
6.	The existence and Information Technology Laboratory / Lab. Computer	In general, strong schools affected have had a computer lab with many computers as the number of units ranging from 20 pieces to no more than 80 pieces. With the use of 1 x sweminggu up to 6x a week. Average usage is 5 x	School with minimal computer contained 21 units and a maximum of 50 units. Average of 2-3 weeks of use 1 x
7.	LCD and computer	One LCD smallest and most of each class has been provided with a laptop each teacher.	One LCD smallest and most 13 laptop LCD with each teacher.
8.	Achievement of scientific papers	Starting of the new school proposal writing scientific papers to schools that have won gold of PIRNAS	Many schools that did not exist, and a few schools that have had youth academic

			programs.
9.	Fieldwork activities	Has been done starting from the school garden, industries related to science around school, various educational visits such as museums in DIY biology, PPSJ, beaches in Gunung Kidul area, park smart. And outside DIY like Sangiran and planetarium	Some have taken advantage of the school environment, the industry around the school, nearby rivers, beaches in Gunungkidul and Bantul area, as well as sugar mills New Gondang.
10.	Environment around the school that can be used for learning science	School garden, fish pond, dry land and paddy fields with wide and varying distances from the park with an area of 60 m to 200 m, an area of 8m-20m. Dry land ranging from 20m-200m with overgrown plants or weeds perindang. There are arealpersawahan distance opposite the school up to 16 km from the school.	Form of school gardens, fish ponds, rice fields and field area. 36 m wide park-1000M, 4m-20m pool, dry land 20m-800m with perennials, fruits, and cassava. Distance rice fields. Distance rice fields bordered by a fence up to 500m
11.	Plant diversity in schools	In general, very varied with the type of which there are more than 25 types.	In general, very varied with the type of which there are more than 25 types.

8

## CONCLUSION

Based on the results of research and discussion, it can be concluded:

1. School institutions SMP N in Bantul can be classified into two category of globalization effects are high effect and middle effect.
2. Learning of science SMP N in Bantul can be classified into two category globalization effects are high effect and middle effect.
3. Scientific Process Skills of SMP in Bantul various from 51.67 to 89.17. There seems no relationship between the school and institutions of science teaching that affected globalization to students scientific process skills.
4. Students Creativite thinking skills of SMP in Bantul was still low. This is indicated by the maximum score is 58.22
5. There is a correlation between the effect of globalization on the school institution with the impact of globalization on science teaching.
6. There is not correlation between the effect of globalization on school institutions with scientific process skills and the students creativity thinking skills.
7. There is not correlation between the effect of globalization on the learning of science with the scientific process skills and students creativity thinking skills.
8. There is a correlation between scientific process skill and students creativity thinking skills.
9. The potential of the community around the school for learning of science are activities, industries, certain professions. Another potential is available with complete media, school yard and garden, swimming school, dry land and paddy land are easily accessible by teachers and students.

## Suggestion:

1. Sample research is to be augmented.
2. Another instrument used to further explore the condition of each school.

3. Future studies may explore the case of SMP N 1 Sanden which has highest scientific when science was only not too affected by globalization.

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