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The Impacts of Model Project Based Learning Concern on Edupreneurship Towards Learning Outcomes in Science Subjects

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Abstract

In this research, the students' science learning outcomes that have not yet achieved completeness. Learning model can facilitate students to learn optimally is the project-based learning (PjBL) model according to edupreneurship. The model is driven by creativity and innovation of 21st century skills. This research conducted to; 1) analyze the effect of the model on students' curiosity; 2) analyze the effect of model on students' science knowledge outcomes and 3) analyze the effect of the model on science process skills. This research method is a quasy experimental with a nonequivalent control group design. The control class should be used project-based learning model and the project-based learning model according to edupreneurship was used experimental class. The subjects of this study were 177 students with purposive sampling technique. Data in the form of learning outcomes are collected through observation, tests, and documentation. The conclutions of the study is the model effective to use and affeted toward outcomes learning of students' coriusity aspect on science subject. The model has not been affecting the students' learning outcomes of knowledge on science subject. The model efefctively to use and influences learning outcomes about students' scientific proceeding skill on learning science subject.

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INTRODUCTION

National education objectives can be achieved with a curriculum. The curriculum 2013 developed by the government purpose to pursuit educational objectives. The purpose of national education objectives is a medium to improving the quality of human resources. The curriculum 2013 enacted by the government had graduation standards (SKL) according to qualifications or ability graduates which includes attitude, knowledge, and skills. The development of this third domain could not be separated with miscellaneous domain. According to the Permendiknas number 32nd year 2013 page 27 one of the compulsory freights based in national curriculum is Natural Sciences. Ramdani (2002) said that Natural Sciences were formed of words natural and sciences that had meaning knowledge of nature or knowledge that learn what happen in nature.

Through learning sciences students expected to have privileged in learning process. Students are trained to learn autonomously on formulated concepts based on facts found in the court. Thereby in learning sciences, it is needful to integrate the scientific process and straight away experiences that student does. In other words, sciences implemented by scientific inquiry which allowed students to cultivate scientific concept and value, attitude, and student's skills. Cultivates' process of value, attitude, and skill. In these process students able to cultivate every ability or attainment thereby each competence will grow full.

Learning science hammered at governance on basic ability of scientific work or scientific skill. Based on the result of study Programme for International Student Assessment (PISA) conducted by Organization for Economic Cooperation and Development (OECD) in 2015, Indonesia ranked on 64th of 72 countries. The issues suggested by PISA and OECD represent general problematic of sciences learning.

Problematic of scientific learning also found at primary school SD Negeri all over V built-area sub-district Grabag, District Magelang pervading SD N Pucungsari, SD N Pesidi, SD N Salam, SD N Ketawang 1, SD N Ketawang 2, SD N Banaran 1, SD N Sugihmas 1, SD N Sugihmas 2.

Based on the results of preliminary observations in learning activities. Outcomes of the observation represent that there are issues in the successive of science learning. The issue among them is the lack of students' curiosity when learning process. Students inclined to be passive during learning process while teachers had used any varied lecture method which combined with question-and-answer activities, discussion and others. The learning model presented by teachers roughly generates curiosity behavior and understanding of material for students. Based on the observations that conducted also seen those students roughly excited to figure out the answers. Therefore, students are not asked a related matter that is taught. Moreover, students neither answering questions launched by the teachers, so therefore the curiosity aspect is not optimal, especially discover (attention of an object). Later, it will make students restricted optimally in utilize five senses. Students neither optimally in utilize five senses could be affected by teachers who neither maximize in using experimental instruments while learning process. Thus, it makes the curiosity aspects of students yet to maximum, especially adventurous aspect. By the presences of learning process which did not use experimental instruments make students unable to convey the finding (questioning). Meanwhile on scientific learning in primary school always insisted on learning process using scientific work though in very simple terms to be applied in primary school.

The teachers had not yet given maximum lectures since not apply innovative learning model yet, especially an appropriate applied on scientific learning. Teachers have not optimal in using media learning technologically kind of projector LCD, internet, scientific KIT, and else. Those things influence the curiosity of students directly being tended to restriction. In terms of the result, rate of science subject taken from study report in 1st semester at several grade classes as the initial sample, exhibit that out of 257 students

still many who received rate below minimum settled criteria (KKM). As for the minimum settled criteria that applied in SD N all over V built-area sub-district Grabag – Magelang is 68. Out of 257 students who received science subject's rate over KKM are about 47%, while who received science subject's rate below minimum settled criteria are about 53%.

Glimpse of these problem summing up that the curiosity of students yet to optimum, in addition the observation result reveal that teachers yet to optimum in command student perform scientific work on science subject, students still learn teacher centered regularly, students yet been facilitated on scientific learning primarily in using the props, rate below KKM. A bunch of these problems suggest that learning process carried yet to involving students actively through scientific work and restricted empower scientific proceeding skill.

Several problems that found at primary school defines that learning process perpetrated yet to engages students actively through scientific work and deprivation on empower scientific proceeding skill.

Scientific learning supposedly emphasized on learning that entangling students directly thru experiential learning that includes scientific proceeding skill (Subali, 2010). Whereas the Arena (1996) elucidate that scientific proceeding skill is a sequence event that taken by students under scientific investigation and students actively contributing on scientific learning. Prasetyono (2018) categorized scientific proceeding skill as 2 types, namely basic scientific proceeding skill and integrated. Scientific proceeding skill assists students to stretch learning through students' personal experiment in starting simple ideas, broadening to establish new ideas and complexity (Dejonckheere et.al., 2016)

Based upon facts has already disclosed than shall be necessary to have a learning model which oriented on scientific proceeding skill allowing able to enhance students learning result. According to Sandra (2018) insisted that less of scientific proceeding skill caused by learning model implemented yet to optimum in drilled scientific proceeding skill, so that it required learning model which able to empower students' scientific proceeding skill.

In order to optimize, teachers needed to qualify to framework interactive learning and able to sharpening behavior, knowledge as well as students' skill. This is accordance with Raharja (2018) a teacher should mastery techniques or skills in teaching so therefore able to utilize those techniques or skills to deliver knowledge on learning process with typically taught to achieve.

Teachers should apply integrated learning through the implemented and development of thinking, responsibility, and nursing the nature as form to tense learning quality which fit with the current learning. Alternative problem solving that could maximize learning process as well as streamline the quality of learning process which that designing an innovative learning model way through collaborative learning model things in created well-pleasing. In accordance which it said by Wijayanto (2009) that stated learning process should be develop scientific learning model based on 4 education pillars, which is a learning model that expected afford facilitate students in learning know to response on scientific issues (learning to know), across scientific works (learning to do), conducted in collaboratively (learning to live together), thereby students expected accustomed to think and do scientifically as well as scientist (learning to be scientist).

The learning model that able to facilitate students in learning optimally is Project Based Learning (PjBL) model. It is compatible with Khaliq & M Alam (2015) that PjBL aims to support students in develop their skill needed at 21st century. According (Lestari et.al, 2018) project-based learning is a learning model that centered in students to assemble and implicate concepts from projects that generated by exploring and solving problems in real world by their-selves.

As Wiyanto (2009) said, the government has policy directions those specifically in attempt to conduct a quantum leap on tackling unemployment and poverty by the 3 paths which is primary and secondary school, development entrepreneur center in collage and national

movements in the form of entrepreneurship training in socities.

Edupreneurship focused on the work done by schools creatively and innovatively to acquiring excellence in form of achievements. Achievements has probably not directly given condensed profits nevertheless a high performing school have more opportunity to achieved awards, grants and input better students. Wijanarko (2021) added that in realize it must be supported by all component's role of educations. Hence to execute edupreneurship practically, school should be established an excellent cooperation with others institution, particularly business world thereby able to facilitate students' proficiency on entrepreneurship.

Edupreneurship provided to students early shall be fomenting creative students. Therefore, in this era intelligent is not enough to face global era, for this edupreneurship education should be given since primary. The application of PjBL model basically on edupreneurship expected to improve the curiosity students in learning and assemble students' knowledge through productive and interactive learning activities allowing able to improve learning outcomes in science subjects and students' scientific proceeding skill.

Wijanarko's research (2017) resulted that learning based projects able to enhance scientific proceeding skill. Based on his research at several primary schools, data analysis demonstrated that the significance of scientific proceeding skill on science subject at 5th grade in chapter human's respiration. The research also in line with Wiyanto (2009) stated that occurrences enhancement of scientific proceeding skill in secondary students as evidence by 0.478 so increase the learning outcomes. Meanwhile Wibowo (2013) said that learning based projects able to enhance creative thinking skill. In contrast to previous assessment research, this research has a uniqueness side or distinction. First of all, this research conducted in primary school whereas the earliest research also conducted in secondary school. The second one, this research did not merely focus on PjBL model and scientific proceeding skill, but also edupreneurship that conducted by V grade primary school.

Based on research done, it is necessary to apply PjBL learning based on edupreneurship which expected able to sharpen students' curiosity, scientific proceeding skill and students' outcomes in 5th grade SD N all over V built-area Sub-district Grabag, District Magelang.

Operational stage of PjBL model based on edupreneurshipn on learning as follows: (1) on the planning step, teacher would cooperate with research to formulating project's objectives. Afterwards, they assigned provision about basic knowledge of edupreneurship concepts. Besides that, they also design learning kit, learning source and evaluation kit; (2) On implementation step, teachers analyze students' characteristic by conducting students' assessments and batching according to their ability. Furthermore, on implementation step also conducted improvements students' comprehension toward life-reality through analyzing happening cases. Later, explanation of the projects and attempt to problem solving focus on edupreneurship, the motivation about edupreneurship spirit, and solving problem in another form that enables the students to be autonomous; (3) on evaluation step, teachers held evaluation of learning and teaching process and also evaluation of edupreneurship outcomes. The evaluation is as instruments for obtaining feedback of learning and teaching activities.

The implementation of PjBL model based on edupreneurship expected able to enhance students' curiosity on learning process and develop students' knowledge through interactive and productive learning process so therefore could increase students' outcomes on science subject. Learning outcomes that will be measure is curiosity aspect, knowledge aspect and skill aspect. Those aspects mentioned before will consider in matter of changing objects what will synchronize with Bloom taxonomy.

The purposes of this research are to 1) analyze impact of PjBL model based on edupreneurship toward students' curiosity; 2) analyze impact of PjBL model based on edupreneurship toward scientific outcomes of

students and 3) analyze impact of PjBL model toward scientific proceeding skill.

METHODS

This quantitative research in form of quassy experimental design with pretest-posttest control group design type. There are 2 class namely Experimental Class charged with PjBL learning model based on edupreneurship, control class charged with PjBL learning model. This research conducted in primary school all over V built-area sub-district Grabag, District Magelang. This research held on 23 September till 12 Oktober 2019 in school year 2019/2020.

The lesson in this reseacrh is the forms of objects, transformation forms of objects and condensed event, sublimate. Those matter is 5th grade primary school stuff, especially 7th theme about events in the life. On 7th theme there are KD 3.7 analyze about effects of heat toward temperature change and form of objects in daily life. There is also KD 4.7 report that test result impact of heat to objects. Based on that KD there are 3 main topics on science subjects.

The successive stage model projects based learning concern on edupreneurship implemented by phases as follows; (1) On planning stage, teacher will offer to design a appropriated project which gave to students, furthermore teacher also setting up media and learning sources to convey provision stuffs. The last planning stage is setting up evaluation instruments for students; (2) On compliance stage, the first things to do is appointed projects and describes project that students will be done. Following the delivery of projects' duties, teacher explains related to appropriated project to students, generate edupreneurship concepts to students. Afterwards teacher will analyze students characteristic and grouping students in heterogeneous. The next activity is student design a project will be done with teacher, planning schedule for projects activities and tracking student activities as well as the progress of student's project; (3) On evaluation stage, teacher evaluated the achieve of learning objectives and do reflection towards learning process that has been done.

On this research the population is all over student in V built-area over sub-district Grabag, District Magelang cover SDN Persidi, SDN Salam, SDN Pucungsari, SDN Sugihmas 01, SDN Sugigmas 02, SDN Ketawang 01 and SDN Ketawang 02.

The form of collecting samples using purposive sampling that is collecting samples with particular consideration. As for the collecting samples have several criteria as follows; first, the curriculum that used in all primary school at V built-area all over sub-district Grabag is 2013 curriculum. The 2nd one, primary school below V built-area Grabag have new acreditation with grade B. Third, primary school below V bulit-area sub-district Grabag located in same area that isarea of sub-distrcit Grabag. The fourth one, the avarage students' test result at 2018 focusing on science subject is almost similar. 5th, teachers have the same academic qulifications that is state civil apparatus (ASN).

The sample of this research is about 176 students at V bulit-area sub-district Grabag-Magelang. Data in this research is outcomes learning data and science observations skill.

Collecting data technique that use is written pretest and protest to measuring the rate of students understanding in the form of outcomes data after received learning use collaboration PjBL model based on edupreneurship especially in change of form objects.

Observation conducted to observe students behaviour, students kill with use collaboration PjBL model based on edupreneurship. Observation conducted by observer with use observation sheets by students, students skill.

Documentation conducted by shooting students activity during learning process along collected students list data, the result of work group. Impact analysis using settled learning analysis and t test.

RESULTS AND DISCUSSION

Outcomes of coriusity aspect was measured using observation sheets. Based on data recieved from control class, of all observer for 1st aspect that is enthusiastic seeking answers aspect acquired average about 74.46. For experimental class acquired average about 84.89. From 1st aspect (enthusiastic seeking answer) can be concluded that average outcomes from experimental class higher than average outcomes from control class. This was occurs because 5th grade students based on Piaget are at the concrete operational stage, pleasently to be doing something directly, pleasently working on group, pleasently to move and love to play (Patel, 2017). Through the application of PjBL model based on edupreneurship invent students be enthusiast seeking answers for issues founded during learning activities. It assign learning prcess on experimental class more active than control class.

The observation's result conducted on control class for attention to objects' aspect, all three observers generate average outcomes about 74.38. For experimental class acquired average about 87.00. From attention to objects' aspect can be concluded that outcomes learning from experimental class higher than control class. Zion (2012) stated that on scientific learning can be done by inquiry with provide problem and investigation. The investigation invent students became more attention to the object to be reserached. Students' attention to the objects to be researched then learning process as to be meaningful. Therefore PjBL model based on edupreneurship which put forward investigation and discovery built students focus on objects observed as well generates attracted works group.

The third aspect observed is enthusiasm for scientific proceeding. For control class acquired average outcomes about 74.02. Whereas all three observers generates outcomes about 85.93 for experimental class. Based on this data can be concluded that for enthusiasm of scientific proceeding aspect, outcomes from experimental class higher than control class. According to (Kizkapan, 2017) one of the excess from PjBL is entangling students to learn gaining information, implemented knowledge and solving problem. Using Pjbl models based on edupreneurship applied for students caused students more active and enthusias for scientific proceeding.

The last aspect from coriusity is inquired every steps of activities. All of observer generates average outcomes about 84.37 from 93 students for experimental class. Whereas for control class acquired average outcomes about 73.90. On inquired every step of activities aspect, experimental class higher than control class caused students from experimental class gained new knowledge that is looking for and founding the truth of theory with looking for themselves or inquiry. Tecaher only as facilitator whi facilitated students on learning process. Students conducted activities with working on group through students' curiosity appear in these activities.

The examination result od data toward Independent t test on this research visually on Table 1 as follow.

Table 1. Measurement results *independent t test*.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	df	Sig. (2-tailed)
VAR00001	Equal variances assumed	16.227	.000	9.68	175	.000
	Equal variances not assumed			9.50	144.44	.000

Based on table 1 datas generates signification result t calculate 0.00. Then, able to be concluded that 0.00 < 0.05 thereby H0 was rejected, H0 was rejeted indicates that PjBL learning model based on edupreneurship having an effect on V grade students' curiosity at Sub-district Grabag's primary school, especially at V bulit-area. This is inversely proportional to the result of Raharja study (2018) that showed that there is no influence of students' curiosity with the students' level education. With using PjBL model based on edupreneurship able to optimalize learning process especially students' curiosity. This statement supported by data resulted from examination independent t test acquired significant result t calculate 0.00. Then, able to concluded that 0.00 < 0.05 thereby H0 was rejected, H0 was rejeted indicates that PjBL learning model based on edupreneurship having an effect on V grade students' curiosity at Sub-district Grabag's primary school, especially at V bulit-area.

Learning result of knowledge aspect from preliminary test or pretest and final test or posttest on last learning. Based on preliminary test that is pretest on experimental class and control class acquired different result. This research on control class and experimental class have an minimum settled criteria. On control class acquired data from 83 students that gained outcomes above KKM about 11%, whereas there are 89% gained outcomes below KKM. As for the KKM established in primary school about 68. Furthermore on experimental class from 93 students acquired data that there are 12% gained outcomes above KKM and 88% gained outcomes below KKM.

Postest result on control class showed outcomes that was not optimal if compared with experimental class. On control class, students' posttest result from 83 students acquired 59% gained outcomes above KKM whereas the rest about 30% gained outcomes below KKM. Postetest result on experimental class showed that from 93 students about 89% gained outcomes above KKM and the rest about 11% gained outcomes KKM.

Pretest and posttest provided to students on control and experimental class have different result. For pretes on control class acquired knowledge aspect's outcomes in average about 57.19 and pretest on experimental class with average 57.79. Meanwhile posttest in experimental class acquired knowledge aspect's outcomes in average about 79.39 and posttest in control class with average 72.93. As for the difference rate of knowledge aspect from experimental class and control class visually on Figure 1 as follow;

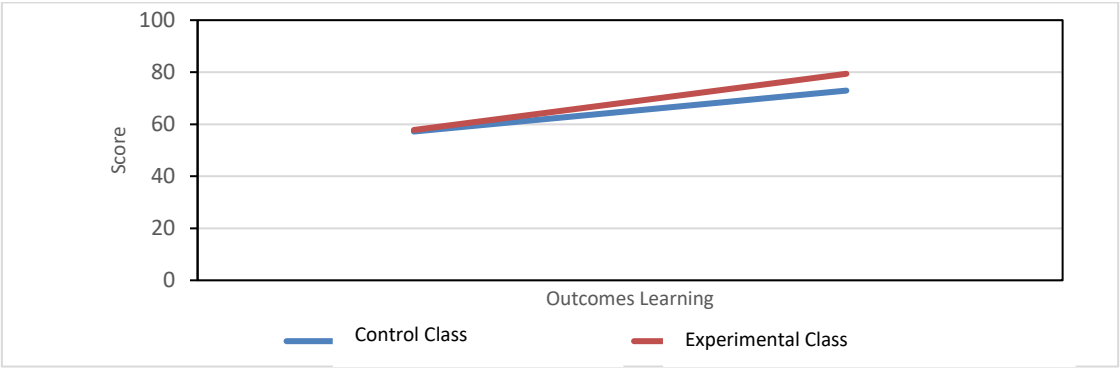

Figure 1. Difference Outcomes Learning

In order to know the difference of average between experimental class and control class therefore researcher using t test that conducted on control class and experimental class, acquired result that significant value (sig) 0.860 > probability 0.05 then HI rejected. It can be concluded that there are not influence for PjBL model based on edupreneurship toward scientific knowledge of students. This is inversely proportional to the result of Wijanarko study

(2017) that PjBL model effective to increase outcomes learning for knowledge aspect. This research's result also inversely proportional to Bilgin study (2014) which is said that achievement could increased by PjBL model. Faruq (2017) stated that actually edupreneurship able to establish creativity character and autonomous of students provided that way through the selction of proper learning strategy and in accoradance with students learning style. This study also inversely proportional to the result of Akbar study (2018) which showed that ther are influence by using learning model to students' cognitive learning outcomes, wherever students' cognitive outcomes learning who teached using PjBL model higher tan PjBL model based on edupreneurship. The weakness of this research is teachers experienced difficulty in appliying PjBL model based on edupreneurship despite in the beginning assembly there were consultation about planning implememntation and evaluation between teachers and researcher. Teachers roughly understand bout syntax that will be used for learning process, thereby teachers doesnt maximum on learning process or activities. Sometimes teachers teaching style still dominated by speech style make learning process does not optimal.

Although in the learning process using PjBL model based on edupreneurship there were not influence toward outcomes of science subject, but PjBL model based on edupreneurship can bulid a well-pleasing atmosphere on class so that students were more interested and motivated to following step by step of learning activities especially on coriusity aspect and improve students' skill. In accoddance with (Koban et.al, 2019) which stated that this model effective to develop students' entrepreneurship attitudes. This can be seen from the increase of attitude for each session, first meeting with 69.71, second meeting and third meeting about 76.3 and 84.32. Based on the findings, it can be concluded that this learning model has not been affecting the learning outcomes aspect of knowledge nevertheless students able to develop their entrepreneurship attitude.

Learning outcomes of scientific proceeding skill measured using by observation sheets. This research using experimental research so therefore needed held variable control. One variable controlled is teachers' skill, in this research there was only one science teacher who carried out scientifi learning both of experimental and control class. By this, there is no difference ability to teach. On controll class, teacher using daily learning approaches that is PjBKL model. While on experimental class, teacher using PjBL model based on edupreneurship.

The assessment carried out on experimental class and control class during learning process. In order to know difference signification average of students' scientific proceeding skill between experimental class and control class therefore researcher using t test using formula independent t.test helping by SPSS. Result from difference signification average of scientific proceeding skill visually on Table 2.

Table 2. Result calculation of t test.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
KPS	177	76.90	4.22	.31741

Based on table 2, showed that statistic rate descriptive N about 177 menas that on research using sample about 177 students. Mean = 76.9096 that is to say average rate counted is 76.9096. Rate std. Devitition or standard deviation about 4.22288 meanwhile std. Error about 0.31741. Later result of one-sample test visually on table 3.

Table 3. Result calculation one sample t test

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
KPS	242.30	176	.000	76.9096	76.2832	77.5360

Based on Table 3, showed that value of t (t-counted) about 242.303. Value of df or degree of freedom about 176. Value of sig. (2-tailed) or signification value using two side test about 0,000. Based on that reslut can decided that value of sig. (2-tailed) < 0.005, so therefore able to concluded that H0 rejected that means PjBL based on edupreneurship affected students' scientific proceeding skill for students 5 grade at SDN all over V built-area sub-district Grabag – Magelang. This research's result in accordance with the reslut of research conducted by (Piliang et.al, 2015) stated that PjBL model gave a good impact to encourage and develop students' scientific proceeding skill. Moreover, Malawati & Sahyar (2016) explained that PjBL model able to increased students' scientific proceeding skill. Gultekin reseacrh (2005) also described that the implementation of PjBL learning increased achievement on students' skill and also created learning activities being more pleasently, entertaining and worthwhile. That research enhanced by statement (Siwa et.al, 2013) about PjBL model in case of implementing optimally therefore able to optimalize learning outcomes and scientific proceeding skill.

Çakici & Türkmen (2013) explained that implementation of learning actvities based on project able to drilled thinking capability scientifically to solve the problems faced by students. Learning based on projects with solving problems allows students to develop their ideas. Faruq (2017) affirmed that applying edupreneurship able to build creative character and independence of student. One of it through an elected trhe suitable learning model fitting with students' learning style. PjBL model based on edupreneurship being a response of the problems founded, thereby affects the learning outcomes and students' proceeding skill all over SDN built-area V sub-district Grabag- Magelang.

Project based learning model based on edupreneurship which facilitates students in student learning visually on Figure 2.

Figure 2. Student Product Results

Students bring their products when they are presented in front of the class. Project based learning based on edupreneurship that makes learning activities fun so that students' curiosity is optimal also fosters science process skills in students from childhood.

CONCLUSION

PjBL model based on edupreneurship effective to use and affeted toward outcomes learning of students' coriusity aspect on science subject, chapter changing form of objects, for students 5 grade at SDN all over V built-area sub-district Grabag – Magelang. PjBL model based on edupreneurship effective to used and has not been affecting the students' learning outcomes of knowledge on science subject, chapter changing form of objects, for students 5 grade at SDN all over V built-area sub-district Grabag – Magelang. Neither existence effects learning outcomes of

science subject. PjBL based on edupreneurship efefctively to use and influences learning outcomes about students' scientific proceeding skill on learning science subject, chapter changing form of objects, for students 5 grade at SDN all over V built-area sub-district Grabag – Magelang

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