

## Increasing Motivation and Achievement in Learning English of eleven grader Science-3 Students of State Senior High School 5 Magelang using Problem Based Learning

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### Abstract

This study aims to determine the increase in motivation and achievement in learning English for eleven grader students of Science 3 Class, State Senior High School 5 Magelang using Problem-Based Learning. The classroom action research method used in this study began at the pre-cycle, cycle 1, and cycle 2 stage. Pre-cycle stage is used to obtain the initial data on the condition of the students before using problem based learning, while cycle 1 and cycle 2 learning were carried out with problem based learning. At each stage data collection is carried out for learning achievement in both knowledge and skills and motivation to learn using test and questionnaires. The results of the study has increased the average learning motivation of 0.18 both in the pre-cycle to cycle 1 and cycle 1 to cycle 2. An increase in knowledge aspect competence by 56% occurred in pre-cycle to cycle 1 and 20% in cycle 1 and cycle 2. For skill aspects there is an increase of an average of 1 both at the pre-cycle to cycle 1 and cycle 1 to cycle 2. It can be concluded that Problem Based Learning is able to increase students' motivation and learning achievement.

**Keywords:** Learning Achievement, Learning Motivation, Problem Based Learning, Classroom Action Research

### Introduction

Research conducted by Ahmad Farisi, Abdul Hamid, Melvina stated that the use of the Problem Based Learning (PBL) model was able to improve learning outcomes in the concept of temperature and heat in State Junior High School of Kaway XVI. Another research conducted by Supandi said that there are differences in the mean learning achievement of Economics subjects with the application of Problem Based Learning models between students who have high



learning motivation and students who have low learning motivation (21.25 and 17.65), There are differences in the mean learning achievement of Economics subjects with the application of Problem Based Learning models with high learning motivation (21.25 and 17.41). There is no mean difference between learning achievement in economic subjects with the application of Problem Based Learning models and low learning motivation (17.65 and 15.67) and there is no mean difference between learning achievement in economic subjects using the Problem Based Learning model and high learning motivation (17.41 and 15.67)

The purpose of learning English is that students can fluently communicate in English both spoken and written and in accordance with their social context (Depdiknas, 2003: 15). The competencies expected by students are able to understand and produce oral and written texts that are realized in four language skills, listening, speaking, reading, and writing, so that students can reach the level of informational literacy. The four integrated skills are expected to be able to equip the students in achieving communication skills that are badly needed to meet the global community.

English has different characteristics from other subjects. These characteristics is that the function of language as a means of communication (Chaer 1994). Moreover, learning English is not only learn vocabulary, grammar and sound, but also learn how to apply knowledge into communication skills. In addition, in learning English must also pay attention to language skills. According to Iswara (2016) language skills include receptive skills; listening and reading and productive skills; speaking and writing skills. English teachers should be able to develop these skills in learning activities so that communication skills competencies can be achieved well. Teachers need to use various techniques, media, and learning methods so that learning becomes fun that students become motivated to learn and it is expected that learning achievement will increase.

Difficulties in learning English are often experienced by students. Megawati (2016) revealed that students experienced difficulties in achieving effective learning of English. Furthermore, students are less motivated during the learning process. This was supported by Suryani (2010) who stated that one of the learning difficulties was caused by unmotivated students because the learning model used was monotonous and too teacher-centered. Besides that the difficulties in learning English are mainly in mastering vocabulary and grammar (Susanti 2002; Setyarini 2010; Hotimah 2017). so it needs innovation in the right learning model in learning English. Problems in learning English also occur in eleven grader students of Science-3 class SMA 5 Magelang. Learning difficulties occur due to learning motivation as well as the level of difficulty of the material taught to students, so that it effects on student learning achievement.

Based on student achievement data in the previous Basic Competencies before in eleven grader students Science-3 class, only 3 students were able to reach the Minimum Completeness Criteria (MCC) score of 69. The gap of this article is there were 22 from 25 students who had not yet reached the MCC score. Thus, class action is needed to overcome problems in the class.

Learning is a process of interaction among teachers, students, material, media, and the environment. The learning process in educational units is held interactively, inspiring, fun, challenging, motivating students to participate



actively, and providing sufficient space for initiatives, creativity, and independence according to the talents, interests, students' physical and psychological development (Pendidikbud Number 22 2016). The learning process changes from students being told to learners to find out, from the teacher as the only learning resource to learning based on various learning sources, and from the textual approach to the process approach as strengthening the use of the scientific approach. To create such a learning process, learning with scientific methods is supported by various learning methods, one of which is the problem based learning (PBL) model.

Problem Based Learning (PBL) is a learning model that introduces problems based on real life at the beginning of learning (De Graaff & Kolmos, 2003). Nur (2011) revealed that the syntax of problem-based learning consists of student orientation to the problem, organizing students to learn; Individual or group investigations, develop and present works, analyze and evaluate problem solving processes. Based on previous studies PBL is not only able to increase learning motivation, but also able to improve critical thinking skills. Prajoko (2012) stated that PBL integrated with the use of multimedia was significantly able to improve student learning achievement.

English teachers in eleven grader students Science-3 class try to overcome this problem by trying to increase student learning motivation. One effort sought by the teacher is to choose and apply a learning model that is predicted able to increase student learning motivation. The model chosen is Problem Based Learning (PBL). 2013 curriculum applies a balanced assessment system between attitudes, knowledge and skills. The scientific approach is the approach required in learning. The steps of learning using the scientific approach use stages that begin with observing, asking, collecting data, reasoning until the stages of association. In line with the implementation of the 2013 curriculum the authors felt that the PBL syntax was very suitable with the scientific approach so that the authors used this method to be applied in learning. PBL syntax includes student orientation to the problem, organizing students to learn, guiding individual / group investigations, developing and presenting work, analyzing and evaluating problem solving processes.

Based on this background it is necessary to conduct classroom action research using the design of teaching learning situation with Problem Based Learning model. It is assumed that learning motivation will increase and be directly proportional to the increase in student learning achievement.

## Method

The method used in this study is the Classroom Action Research Method (CAR) which was carried out starting in pre-cycle and two cycles. The subjects of this study were eleven grader of Science-3 class of State Senior High School 5 Magelang in the academic Year 2018/2019. The data collected in this study includes data on students' cognitive, psychomotor and learning motivation. Learning achievement data was collected using tests while learning motivation data was collected using a learning motivation questionnaire. The results of the study were then analyzed descriptively to describe the results of the study. Qualitative data analysis refers to the Miles and Huberman analysis model. The



data analysis carried out in three components, they are data reduction, data presentation and conclusion/verification

### Findings and discussion

The results of this study are divided into three stages; the pre-cycle stage, the first cycle and the second cycle.

#### Pre-cycle stage

At this stage data obtained from learning achievement includes aspects of knowledge and skills and data on students' motivation. Students' achievement data both in the form of aspects of knowledge and skills are presented in Table 1.

Table 1. Data on research results in pre-cycle aspects of knowledge and skills

Aspect	Competence	Material	Completion		Average	Median	Mode	Standar Deviation
			Yes	No				
Knowledge	3.1	<i>Giving Suggestion</i>	12%	88%	54	55	65	12,42
Skills	4.1	<i>Giving Suggestion</i>	100%	0%	77	77	73	6

Based on Table 1, it can be seen that the knowledge aspects of Basic Competence 3.1 have learning completeness of 12% while 88% of students do not complete with an average of 54. It can be said that in general, the achievement of knowledge has not been completed. While for Basic Competence 4.1 skill aspects have learning completeness of 100% with an average of 77. For the aspects of students' skills, it can be said that all students have been able to achieve minimal completeness but have an average that still needs to be improved. Data on learning motivation in pre-cycle activities can be seen in Table 2.

Table 2. Data on pre-cycle learning motivation

Criteria	Percentages	Amount
High	6	24%
Medium	14	56%
Low	5	20%

Based on Table 2, it can be seen that the level of learning motivation at the pre-cycle stage varies. The low level of learning motivation is 24%, medium category is 56%, and high category is 20%.

#### Cycle I Stage

At the stage of cycle 1 problem-based learning was carried out in Basic Competence 3.2 and Basic Competence 4.2 about perfect tense material. The data result of the research in Cycle I includes both knowledge and skills aspects and data on student motivation. Data of the research results in the form of knowledge and skills aspects are presented in Table 3.



Table 3. Data on the aspects of knowledge and skills in Cycle I

Aspects	BC	Material	Completeness		Average	Median	Mode	Standard Deviation
			Yes	No				
Knowledge	3.2	<i>Perfect</i>	68%	32%	77	80	85	15.79
		<i>Tense</i>						
Skill	4.2	<i>Perfect</i>	100%	0%	78	77	73	7
		<i>Tense</i>						

Based on Table 3, it can be seen that after following problem-based learning, learning aspects of knowledge aspects Basic Competence 3.2 have learning completeness of 68% while 32%. Students do not complete with an average of 54. Thus most students have completed learning, but there are still some that are not complete. While for Basic Competence 4.2 skill aspects have learning learning completeness of 100% with an average of 78. In general for the aspects of students' skills it can be said that all students have been able to achieve minimal completeness but and experience an average increase compared to pre-cycle. Data on learning motivation in cycle I activities are presented in Table 4.

Table 4. Data on learning motivation in the first cycle

Criteria	Amount	Percentage
High	6	24%
Medium	19	76%
Low	0	0%

Based on Table 4, it can be seen that the level of learning motivation at the Cycle I stage varies. The low motivation level of learning is 0%, the moderate category is 76%, the high category is 24%.

### Cycle II stage

Cycle II is the last cycle in this study. In this cycle, problem-based learning is carried out in the Basic Competence 3.3 and Basic Competence 4.3 material on the Future Plan. Based on the results of the research in Cycle II the data on learning achievement of knowledge and skills aspects and data on student motivation could be obtained. Data from research results in the form of knowledge and skills aspects are presented in Table 5.

Table 5. Data on aspects of knowledge and skills in Cycle II

Aspects	BC	Material	Completeness		Average	Mean	Mode	Standard Deviation
			Yes	No				
Knowledge	3.3	Future	88%	12%	81	80	70	14.55
		Plan						
Skills	4.3	Future	100%	0%	79	80	80	7
		Plan						

Based on Table 5, it can be seen that after following problem-based learning, learning achievement of knowledge aspects, Basic Competence 4.3 has learning completeness of 88%. Thus most students have completed learning. While for Basic Competence skills aspects 4.4 have learning learning completeness of 100%



with an average of 79. In general for aspects of student skills can be said all students have been able to achieve minimal completeness but and the average increase compared to cycle I. Data on learning motivation in cycle II are presented in Table 4.

Table 6. Data on learning motivation cycle stage II

Criteria	Amount	Percentage
High	12	48%
Medium	13	52%
Low	0	0%

Based on Table 6, it can be seen that the level of learning motivation at the Cycle II stage varies. The low motivation level of learning is 0%, the moderate category is 52%, the high category is 48%.

Based on the results of the study, it can be seen that the increase in learning achievement for each cycle as in Figure 1.

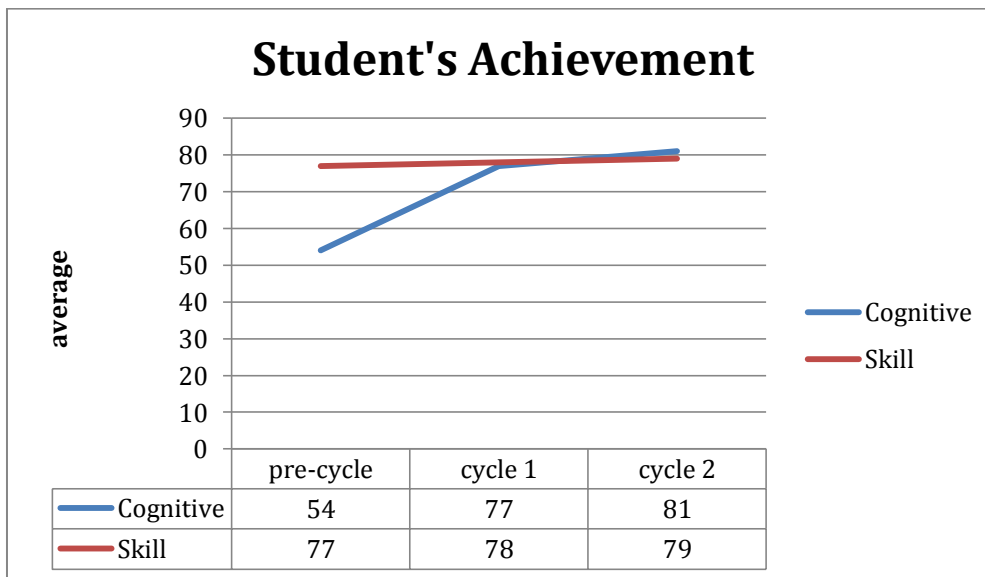
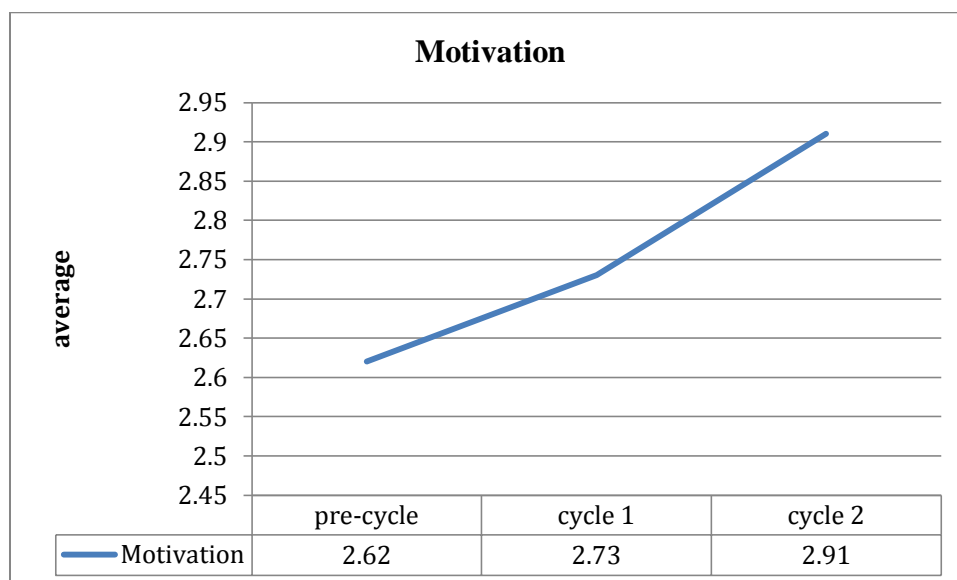


Figure 1. Increased Learning Achievement Knowledge and Skills Aspects

Based on Figure 1, it can be seen that there was a significant increase in learning achievement in each stage. There was a high increase on the knowledge aspect from pre-cycle stage to the first cycle. While in cycle I to Cycle II there was also an increase in class averages. For the skill aspect, starting in the pre-cycle to cycle II phase there is an increase in class grades that are not large. In cycle I to Cycle II there was an intersection where the value of knowledge became greater than the value of skills. Increased learning motivation is presented in Figure 2.





**Figure 2. The increase learning motivation**

Based on Figure 2, increased learning motivation occurs both in pre-cycle to cycle I and cycle I to cycle II. This shows that the use of problem-based learning models is able to increase students' learning motivation.

Improvement of learning achievement and motivation in this study was due to the learning model used in this study. Problem-based learning is able to improve learning achievement and motivation to learn because in the problem-based learning process is able to activate students and be involved in the problem solving process. This is consistent with Nur (2011) who stated that PBL emphasizes the problem as a reference in learning. In this study the problems presented to students are open-ended and contextual. According to Resnick and Gleser in Nur (2011), the problems used in PBL must be contextual and open-ended which will help increase curiosity to solve problems. Thus high curiosity is formed as well as high learning motivation.

One of the problems presented in this study is the phenomenon that occurs in society. Students look for problems in the community related to the material being taught. Thus the problem in this study is contextual. Phenomena that occur in everyday life often raise a problem that can be used for problem-based learning material. PBL can help students learn the content and practice problem solving skills by involving them in everyday life problem situations. Zubaidah (2013) states that PBL is one learning model that is able to equip students to face an increasingly complex future. PBL is also one of the learning models recommended for use in the 2013 curriculum.

Improved learning achievement preceded by increased learning motivation in this study cannot be separated from learning models that reflect constructivism in learning. PBL is in line with constructivism learning theory. According to Gijsselaers (1996) PBL is derived from Piaget constructivism learning theory where learners actively construct their own knowledge. Modern cognitive psychology states that learning occurs from learner action, and teaching only



plays a role in facilitating the occurrence of knowledge construction activities by students. Educators must focus on helping learners achieve self-directed learning skills. In this case there is a process of knowledge construction in the cognitive structure of students through problems solved in the learning process.

In this study the problem solving process was carried out by group discussions and class discussions. This is in accordance with the PBL syntax involving learners in cooperative small groups. The use of cooperative working groups fosters the development of learning communities in the classroom. Group work also helps develop essential characteristics needed for success after students have finished learning, such as in communicating verbally, communicating in writing and building teamwork skills (Vygotsky, 1978). In this case the knowledge of students can be formed through the social interactions they do in small groups according to Vygotsky's constructivism learning theory. PBL is not designed to provide as much information as possible to students. PBL was developed to develop the ability to think, develop knowledge and skills to solve problems and intellectual skills, learn to share the role of adults through their involvement in real experiences, develop effective self-directed learning skills (Nur, 2011).

### Conclusion

Based on the results of research and discussion, it can be concluded that the use of a problem-based learning model is able to improve learning achievement and motivation for eleven grader of science- 3 students of State High School 5 Magelang. This is due to the involvement of students who are active in learning through group discussion activities to solve problems in everyday life.

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### References

- Chaer, A. (1994). *Linguistik umum*. Jakarta,, Indonesia: Rineka Cipta.
- De Graaf, E., & Kolmos, A. (2003). Characteristics of problem-based learning. *International Journal of Engineering Education*, 19(5), 657-662.
- Dhieni, N., Fridani, L., Muis, A., & Yarmi, G. (2014). Metode pengembangan bahasa.
- Hotimah, E. (2017). Penggunaan Media Flashcard Dalam Meningkatkan Kemampuan Siswa Pada Pembelajaran Kosakata Bahasa Inggris Kelas II MI Ar-Rochman Samarang Garut. *Jurnal Pendidikan UNIGA*, 4(1), 10-18.
- Iswara, P. D. (2016). Pengembangan materi ajar dan evaluasi pada keterampilan mendengarkan dan membaca. *Mimbar Sekolah Dasar*, 3(1), 89-97.





- Megawati, F. (2016). Kesulitan mahasiswa dalam mencapai pembelajaran bahasa Inggris secara efektif. *PEDAGOGIA: Jurnal pendidikan*, 5(2), 147-156.
- Nur, M.( 2011). *Model Pembelajaran Berbasis Masalah*. Surabaya: Pusat IPA dan Matematika Sekolah UNESA. Prajoko, S., Sudarisman, S., & Sutarno, S. (2012). Pembelajaran Invertebrata Model PBL Dengan Menggunakan Multimedia Film Dokumenter Dan Multimedia Animasi Ditinjau Dari Gaya Belajar Dan Kreativitas (Studi Kasus Pembelajaran Porifera, Cnidaria dan Platyhelminthes Kelas X Tahun Akademik 2011-2012 di SMA. In *Prosiding Seminar Biologi* (Vol. 9, No. 1).
- Suryani, Y. E. (2010). Kesulitan belajar. *Magistra*, 22(73), 33.
- Susanti, R. (2002). Penguasaan kosakata dan kemampuan membaca bahasa inggris. *Jurnal pendidikan penabur*, 1(1), 87-93.
- Setyarini, S. (2010). "Puppet Show": Inovasi Metode Pengajaran Bahasa Inggris Dalam Upaya Meningkatkan Kemampuan Berbicara Siswa SD. *Jurnal Penelitian Pendidikan*, 11(1), 1-6.
- Gijselaers, W. H. 1996. Connecting problem-based practices with educational theory. *New directions for teaching and learning*, 1996 (68), 13-21.
- Vygotsky, L. 1978. Interaction between learning and development. *Readings on the development of children*, 23(3), 34-41.
- Zubaidah, S. Yulianti, L., Mahanal, S. 2013. *Model-Model Pembelajaran SMP IPA*. Malang: UM Press.

