

SB₂ COLLA METHOD : APPLICATION OF PROBLEM BASED LEARNING MODEL TO IMPROVE STUDENT LITERATURE

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Abstract

Education is a medium that plays a very important role in producing quality and potential human resources. Improving the quality of human resources is determined by improving the quality of students. Improving the quality of students is carried out by teachers who focus on improving the quality of learning in the classroom by being oriented to high-level skills. Quality human resources are able to make Indonesia a developed country. One indicator of a developed nation is a nation that has a high literacy culture. In an effort to achieve this, the authors designed a learning work called the SB2 Colla Method (Problem Based Learning Model Application to Improve Student Literacy). The implementation of learning using this method involves collaborating three subjects, namely Sociology, Biology, and Indonesian Language. The purpose of this paper is to apply the SB2 Colla method to improve student literacy as an application of a problem-based learning model. The implementation of this method takes place from August 19th, 2020 to September 21th, 2020. The type of research used is qualitative and the data collection technique is participatory observation. Observations in this study by observing the implementation of the SB2 Colla learning method. This method is a learning method that collaborates on Sociology, Indonesian, and Biology subjects. The results obtained are that the application of the SB2 Colla learning method as an application of problem-based learning models can improve students' literacy skills. This is evidenced by the completeness score above 80% in all assessment categories (writing, product, practice, and daily assessment) for both class X science and social studies.

Keywords : sb2 colla method, problem based learning model, literacy

Introduction

The progress of a nation is influenced by the quality of human resources, the quality of human resources is determined by the education factor. Education is an important factor in producing competitive and competitive human resources. The Indonesian nation is a developing country that will not be able to progress as long as it has not improved the quality of human resources. The nation's quality of life can improve if it is supported by an established education system. An established education system allows people to think critically, creatively, innovatively, and productively. If you have good knowledge skills and are supported by advances in science and technology, the national development goal, namely the achievement of a just and prosperous society, can be achieved (Purwanto R, 2008).

Education is a medium that plays a very important role in producing quality and potential human resources. Education forms a process of self-maturation so that in the decision-making process on a problem faced is always accompanied by a great sense of responsibility.

According to Law Number 20 of 2003 Article 1 paragraph 1, what is meant by education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, morals. noble character, as well as the skills needed by himself, society, nation and state. The function of education based on Law Number 20 of 2003 Article 3 is to develop capabilities and shape the character and civilization of a dignified nation in the context of educating the nation's life, aiming at developing the potential of students to become human beings who believe and fear God Almighty, have noble character, healthy, knowledgeable, competent, creative, independent, and become a democratic and responsible citizen.

Improving the quality of human resources is determined by improving the quality of students. Improving the quality of students is carried out by teachers who focus on improving the quality of learning in the classroom by being oriented to high-level skills. The design of improving the quality of learning is an effort to improve the quality of students which ultimately improves the quality of education in Indonesia. The implementation of high-level skills (HOTS/High Order Thinking Skills) in

the 2013 curriculum, which are 21st century skills, aims to enable students to acquire and master three competencies, namely the 4C competency (Creativity Thinking and innovation, Critical Thinking and Problem Solving, Communication, dan Collaboration), literacy, and Character Strengthening Education.

A great nation is characterized by a literate society, which has a high civilization, and is actively advancing the world community. Literacy in this context is not only a matter of how a nation is free from illiteracy, but also, more importantly, how citizens of the nation have the life skills to be able to compete and co-exist with other nations to create world welfare. In other words, a nation with a high literacy culture shows the nation's ability to collaborate, think critically, be creative, and communicative so that it can win global competition.

Indonesia must be able to develop a literacy culture as a prerequisite for 21st century life skills through integrated education, starting from family, school, to the community. Mastery of the six basic literacys agreed by the World Economic Forum in 2015 is very important not only for students, but also for parents and all members of the community. The six basic literacys include literacy, numeracy, scientific literacy, digital literacy, financial literacy, and civic-cultural literacy (Wiedarti et al, 2018). Even now, the scope of literacy culture has developed in accordance with the conditions of society and the environment in Indonesia, such as disaster literacy, traffic order literacy and so on. One of the efforts to develop the nation's literacy culture is the provision of reading materials and students' reading interest. With the ability to read interest and the availability of quality and affordable reading materials, the next basic literacy can be developed.

The needs of students in knowing, experiencing, and implementing meaningful learning outcomes are often constrained because each subject has its own project and learning target. The burden on students is getting heavier and tiring because each teacher demands various competency bills that must be done independently.

Based on the above study, an innovative learning method is needed in the form of collaborative projects between subjects that can reduce student workloads, but still achieve the overall learning objectives. The author designs a learning work called the SB₂ Colla Method (Problem Based Learning Model Application to Improve Student Literacy). This method is a method in which the implementation of learning in it collaborates three subjects, namely Sociology, Biology, and Indonesian Language. Learning with this method is expected to produce students who have good literacy skills, creative thinking skills, problem solving, good communication, and cooperation, and have good character so that they can build Indonesia into a developed country that has competitiveness and participates in the welfare of the world community.

The purpose of this paper is to apply the SB₂ Colla method to improve student literacy as an application of a problem-based learning model. Through collaboration in learning, teachers can strengthen each other's knowledge, understanding, and skills of students in understanding and applying the concepts of a subject into other subjects as well as in real life.

Literature Review

1. Literacy

According to Elizabeth Sulzby in Zaini (2018), literacy is a person's language ability (listening, speaking, reading, and writing) to communicate in different ways according to his goals. In 2006, Graff said that literacy is the ability to read and write (Zaini, 2018).

Literacy means practices and social relations related to knowledge, language, and culture. Literacy is the ability to identify, determine, find, evaluate, create effectively and in an organized manner, use and communicate information to solve various problems (UNESCO, 2003).

Law Number 3 of 2017, states that literacy is the ability to interpret information critically so that everyone can access science and technology as an effort to improve their quality of life.

Abidin in Wiedarti et al (2018) says that multiliteracy is defined as the skill of using various ways to express and understand ideas and information using conventional text forms as well as innovative text forms, symbols and multimedia. Multiliteracy or literacy in today's digital era is the ability to view knowledge in an integrative, thematic, multimodal, and interdisciplinary way (Abidin, 2017).

Based on these theories, the authors conclude that the definition of literacy is a person's language ability that views knowledge in an integrative, thematic, multimodal, and interdisciplinary way in overcoming problems to improve the quality of life.

According to the World Economic Forum in 2015, mastery of six basic literacy is very important for students, parents and all citizens. The six basic literacys include literacy, numeracy, scientific literacy, digital literacy, financial literacy, and civic-cultural literacy (Wiedarti et al, 2018).

Literacy is the knowledge and skills to read, write, search, search, process, and understand information to analyze, respond to, and use written texts to achieve goals, develop understanding and potential, as well as to participate in the social environment (Saryono et al, 2017). Numerical literacy is the knowledge and skill to use a variety of numbers and symbols related to basic mathematics to solve practical problems in various contexts of everyday life, and analyze information presented in various forms (graphs, tables, charts etc.). and use

the interpretation of the results of the analysis to predict and make decisions (Han et al, 2017).

Scientific literacy is scientific knowledge and skills to be able to identify enrichment, acquire new knowledge, explain scientific phenomena, and draw conclusions based on facts, understand the characteristics of science, awareness of how science and technology shape the natural, intellectual, cultural environment, and willingness to be involved and care about science-related issues (Fananta et al, 2017). Digital literacy is the ability to understand and use information in various forms from a very wide variety of sources that are accessed through computer devices (Nasrullah et al, 2017).

Financial literacy, according to Fianto et al (2017) is knowledge and skills to apply understanding of concepts and risks, skills to be able to make effective decisions in a financial context to improve financial well-being, both individually and socially, and to be able to participate in the community. Hadiansyah et al (2017) say that cultural and civic literacy is the ability of individuals and communities to behave towards their social environment as part of a culture and nation.

School Literacy Movement

The school literacy movement is a participatory business or activity involving school residents (students, teachers, school principals, education staff, school supervisors, school committees, student guardians), academics, publishers, mass media, communities, and stakeholders in the school. under the coordination of the Directorate General of Primary and Secondary Education of the Ministry of Education and Culture (Wiedarti et al, 2018).

The school literacy movement is a social movement with the collaborative support of various elements. One of the steps taken to realize the school as a learning organization whose citizens are literate for life is the habit of reading students. This habituation is done with 15 minutes of reading. When the habit of reading is formed, it will then be directed to development and learning activities. The variety of activities can be in the form of a combination of developing receptive and productive skills (Wiedarti et al, 2018)

2. Problem Based Learning Model

The learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve learning goals (PSMA, 2016). Problem-based learning model is learning that uses various thinking abilities of students individually and in groups as well as the real environment to solve problems so that they are meaningful, relevant, and contextual (Seng O.T, 2003).

According to Tan in Amir (2009), the characteristics included in this model are:

- a. Problems are used as the beginning of learning
- b. The problem used is a real-world problem that is presented in an ill-structured manner.
- c. Problems usually require multiple perspectives.
- d. Problems challenge students to get learning in new learning areas
- e. Highly prioritize self-study
- f. Utilize a variety of knowledge sources
- g. The learning is collaborative, communicative, and cooperative

These characteristics require students to be able to use higher order thinking skills, especially problem solving skills.

In the problem-based learning model, the teacher acts as a guide on the side rather than sage on the stage. This emphasizes the importance of learning aids in the early stages of learning. Students identify what they know and don't know based on information from textbooks or other sources of information. The syntax of the problem-based learning model according to Arends (2012), namely:

- a. Student orientation on problems
This stage focuses students on observing the problem that is the object of learning
- b. Organizing learning activities
Students submit various questions to the problems studied
- c. Guiding individual and group investigations
Students collect information/conduct experiments to obtain data in order to answer or solve the problem being studied
- d. Develop and present the work
Students associate data found from experiments with various other data from various sources
- e. Analyze and evaluate the problem solving process
Students get answers to existing problems, then analyzed and evaluated

3. SB₂ Colla Method

The learning method is the coordination of a set of principles to carry out learning or how to present learning materials in certain situations (Susilawat in Amanah et al, 2016). According to PSMA (2017), the learning method is a method used to implement plans that have been prepared in the form of real and practical activities to achieve learning objectives. The method is a learning media that can be used in order to streamline communication and interaction between teachers and students in the learning process in the classroom (Sanaky in Amanah et al, 2016).

Collaboration is a form of cooperation, interaction, compromise of several related elements, both individuals, institutions, and or parties involved directly and indirectly who receive the consequences and benefits. The values that underlie collaboration are the same goal, common perception, willingness

to proceed, provide mutual benefits, and honesty (Sinergantara.or.id., 2020). According to Abdulsyani (1994), collaboration is a form of social process in which there are certain activities aimed at achieving common goals by helping each other and understanding each other's activities. Collaboration involves the division of tasks, where everyone does every job that is their responsibility to achieve a common goal.

The SB₂ Colla method is an extension of the SB₂ Collaboration learning method. This learning method is a collaborative learning in three subjects, namely Sociology, Indonesian Language, and Biology. This collaboration aims to make students have increased literacy skills so that they can solve problems that exist in everyday life. In this collaboration, these three subjects integrate the subject matter of each subject in one lesson consisting of several stages of learning. The learning materials are as follows:

1. Indonesian = exposition and anecdotes
2. Biology = biodiversity
3. Sociology = social interaction

Research Methodology

1. Place and Time

The research was carried out in biology class X IPA and X IPS semester 1 SMART Ekselensia Indonesia, Bogor, West Java which took place from August 19th, 2020 to September 21th, 2020.

2. Research Methods

The type of research used is qualitative. Qualitative research is research conducted in natural conditions, the data collected and the analysis is qualitative. The data collection technique used in this study is participatory observation, namely the researcher is involved in the daily activities of the person being observed or used as a source of research data (Sugiyono, 2019). Research conducted by the author by observing the learning innovation named the SB₂ Colla Method.

Planning/work steps on the implementation of the SB₂ Colla learning method, namely:

- a. Preparation of a Learning Implementation Plan which is a learning scenario from the SB₂ Colla method. Preparation of RPP by collaborating the Core Competencies and Basic Competencies of the three subjects
- b. Determination of Minimum Completeness Criteria and Student Success Criteria. The criteria for success in this paper can be seen from students' mastery and understanding of literacy mastery which consists of four categories of assessment, namely writing assessment, product, practice, and daily assessment/test. Success in learning outcomes is indicated by the number of students who have

scores equal to or more than the Minimum Completeness Criteria of 78 reaching 80%.

- c. Develop evaluation tools/value instruments in the form of test results to determine learning outcomes/improvement of students' literacy skills
- d. Learning is carried out on two major classes, namely class X IPA and class X IPS.

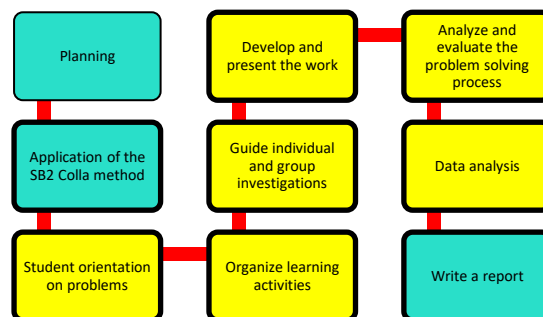


Image 1. The design of the SB₂ Colla learning method implementation as a PBM application to improve student literacy.

3. Data Analysis Techniques

The data obtained from the observations were analyzed descriptively qualitatively by calculating the completeness value of student achievement.

Results and Discussion

1. Learning Innovation Ideas

The idea of innovation that is the basis for the SB₂ Colla method begins with the learning objective which requires students to be skilled in solving contextual problems. Students can improve their ability to apply concepts to new and real problems, integrate the concept of Higher Order Thinking Skills (HOTS), desire to learn, direct independent learning, and skills. Students are also expected to have a leadership spirit through the ability to communicate the results of the learning.

The author tries to find the right way to implement the form of real and practical activities in achieving the learning objectives. Therefore, the author developed a concept called the SB₂ Colla Method. The author makes a cross-subject or interdisciplinary learning innovation (interdisciplinary) because the real problems that exist in everyday life are often related to various fields. The author makes collaborations / collaboration patterns in three fields of study/subjects, namely Indonesian Language, Biology, and Sociology.

The issues raised are biodiversity and the environment which are the material of the Biology subject. These issues were then tried to be solved by students in groups through social interaction material in Sociology subjects. The results of the problem solving are reported in the form of

exposition texts and anecdotal texts which are material from Indonesian language subjects.

Implementation of the SB₂ Colla method which is one of the concepts of learning innovation in solving contextual problems by utilizing the Problem Based Learning model so that learning outcomes in the form of increasing literacy can be achieved properly, namely reading and writing literacy, scientific literacy, and cultural citizenship literacy.

2. Implementation in Learning

The implementation or implementation of learning using the SB₂ Colla Method starts August 19th, 2020 to September 21th, 2020. The implementation of learning for both class X science and class X social studies is carried out separately, but the number of meetings and learning is the same. The stages of implementing the SB₂ Colla method of learning are as follows.

1) First Meeting

(Class X IPA/Wednesday August 19th 2020, Class X IPS/Monday August 24th 2020)

Biology teacher provides learning materials about biodiversity and the environment. The teacher divides the students into seven groups. At this meeting, students are expected to be able to observe the problem that is the object of learning.

2) Second Meeting

(Class X IPA/Monday August 24th 2020, Class X IPS/Thursday August 27th 2020)

The Indonesian teacher provides learning materials about exposition texts. Each group can analyze the exposition text and discuss the results of the analysis classically regarding examples of problems related to biology and sociology, the structure of the exposition text, and inductive and deductive paragraphs.

3) Third Meeting

(Class X IPA/Wednesday August 26th 2020, Class X IPS/Friday August 28th 2020)

Each group can analyze anecdotal texts, look for examples of anecdotal texts and humor. The teacher instructs the students to be able to distinguish between anecdotal and humorous texts. The teacher asks students to discuss classically about the differences between anecdotes and humor, structure, and satire/hidden meanings.

4) Fourth Meeting

(Class X IPA/Friday August 28th 2020, Class X IPS/Monday August 31th 2020)

Sociology teachers provide learning materials about social interaction, namely understanding, characteristics, requirements, driving factors, and forms of social interaction.

5) Fifth Meeting

(Class X IPA/Monday August 31th 2020, Class X IPS/Thursday September 3th 2020)

Sociology and Biology teachers together provide learning in one class. The learning carried out at this meeting was to analyze in more depth about environmental and social issues related to social interaction and biodiversity by providing opportunities for students to ask questions. In this lesson, each group is asked to determine the topic/theme of writing about the issues being studied.

6) Sixth Meeting

(Class X IPA/Wednesday September 2th 2020, X IPS/Friday September 4th 2020)

Sociology, Biology, and Indonesian Language teachers together provide learning in one class. The teacher asks students to collect information to obtain data in order to answer or solve the problems studied by searching for materials through the web/internet in the Computer Laboratory, where previously each group showed the outline of their essay/writing.

7) Seventh Meeting

(Class X IPA dan X IPS/Monday September 7th 2020)

At this meeting, each group associates the data obtained with other data from other sources, namely the school library. The learning activities at this meeting of the Indonesian teacher were that each group analyzed the linguistics of the exposition and anecdotal texts, and discussed the results of the analysis.

8) Eighth Meeting

(Class X IPA dan X IPS/Wednesday September 9th 2020)

At this meeting, each group analyzes and evaluates the answers to the problems and then writes them down into exposition texts and anecdotal texts

9) Ninth Meeting

(Class X IPA dan X IPS/Friday September 11th 2020)

Sociology, Biology, and Indonesian Language teachers together in one class provide learning in one class, namely assisting each group of students to create learning products according to the theme of each group.

10) Tenth Meeting

(Class X IPA/Monday September 14th 2020, X IPS/ Selasa September 15th 2020)

Learning at the tenth meeting was attended by teachers of all three subjects and all students from class X science and class X social studies. The learning activity at this meeting is that each group takes turns making presentations and other groups can respond or ask questions to the presentation group. The three subject teachers assess the results of the presentations made by groups of students.

11) Eleventh Meeting**(Class X IPA dan X IPS/Wednesday September 16th 2020)**

Learning at this meeting continued with presentations to other groups of students.

12) Twelfth Meeting**(Class X IPA dan X IPS/Friday September 18th 2020)**

In the afternoon around 13.00, the teacher of the three subjects together with all students, both class X IPS and class X IPA conducted activities that were refreshing and together, namely watching an educational film entitled "Sherlock Holmes".

13) Thirteenth Meeting**(Class X IPA dan X IPS/Monday September 21th 2020)**

All students work on daily assessments/tests independently in different rooms according to their majors, but the questions given are the same. The questions given consist of two types, namely questions from each subject and questions which are a collaboration of the three subjects that are HOTS (Higher Ordinary Thinking Skills).

3. Data on Learning Implementation Results

The data obtained are data from the application of the SB₂ Colla method as an application of problem-based learning models to improve students' literacy skills. The data can be seen in table 1 and table 2.

Table 1. The results of the assessment of the application of the SB₂ Colla method in class X IPA

No	Problem	Initial	Wri	Pro	Pra	DA
1	Disappearing traces	ASZ	90	89	81	88
		SR	90	89	81	78
2	Take the disaster on the outskirts of the city	SI	85	75	85	83
		FL	85	75	85	85
		LMF	85	75	85	81
3	Ready, Sink	MZ	85	94	96	87
		MR	85	94	96	78
		AH	85	94	96	78
4	Shark without fins	RA	86	92	91	90
		YR	86	92	91	91
		ZR	86	92	91	78
5	Waiting for the Sumatran striped nose	MR	85	88	94	78
		MG	85	88	94	92
		RH	85	88	94	84
6	Treating a wounded pair of paradise	JI	88	84	92	78
		MQ	88	84	92	84
		RR	88	84	92	92
7	Plastic, threatening immigrants	MM	87	79	85	80
		MJ	87	79	85	82
		IK	87	79	85	85

Notes: Wri: Writing, Pro: Product, Pra: Practice, DA: Daily Assessment

Table 2. The results of the assessment of the application of the SB₂ Colla method in class X IPS

No	Problem	Initial	Wr	Po	Pa	DA
1	Coupling of the king of the jungle	AK	89	80	79	81
		WI	89	80	79	84
		HU	89	80	79	87
2	Ex-situ conversion inflation	HA	91	81	86	78
		FA	91	81	86	80
		HM	91	81	86	78
3	Recognizing deforestation that involves social interactions	MF	92	75	80	78
		AR	92	75	80	90
		GH	92	75	80	81
4	Willing to destroy for the sake of need	MR	88	96	82	83
		S	88	96	82	82
		A	88	96	82	80
5	Leaf money hunter	MI	91	92	90	83
		R	91	92	90	78
		MJ	91	92	90	87
6	My country towards microbio-diversity	MA	88	92	89	79
		M	88	92	89	78
		F	88	92	89	84
7	Intimidating the forest strippers	RN	92	95	90	83
		HF	92	95	90	78
		IH	92	95	90	89

4. Data Analysis of Implementation Results

Students who complete are students who meet the Minimum Completeness Criteria. The measurement of students' complete literacy skills uses the following formula.

$$A = \frac{a}{b} \times 100\%$$

Information :

A= Student literacy ability

a = Number of students who completed in one class

b = Total number of students in one class

Students literacy ability can be seen from four categories in this paper, namely writing, product, practice/presentation, and daily assessment. Students literacy ability can be seen from the following levels of completeness.

1) Writing**Table 3. Writing category students literacy skills using the SB₂ Colla method**

Class	Completeness Level of Students	Amount	Percentage
X IPA	Finished	21	100%
	Not Finished	0	0%
X IPS	Finished	20	100%
	Not Finished	0	0%

2) Product

Table 4. Product category students literacy skills using the SB₂ Colla method

Class	Completeness Level of Students	Amount	Percentage
X IPA	Finished	18	85,7%
	Not Finished	3	14,3%
X IPS	Finished	17	85%
	Not Finished	3	15%

3) Practice/presentation

Table 5. Students literacy skills in the practical category use the SB₂ Colla method

Class	Completeness Level of Students	Amount	Percentage
X IPA	Finished	21	100%
	Not Finished	0	0%
X IPS	Finished	20	100%
	Not Finished	0	0%

4) Daily Rating

Table 6. Literacy ability of students in the daily assessment category using the SB₂ Colla method

Class	Completeness Level of Students	Amount	Percentage
X IPA	Finished	21	100%
	Not Finished	0	0%
X IPS	Finished	20	100%
	Not Finished	0	0%

Based on table 3, table 4, table 5, and table 6, it can be seen that the literacy abilities of students in both class X science and social science in all assessment categories (writing, product, practice, and daily assessment) have completeness scores above 80%.

The writings made by each group of students are in the form of exposition texts and anecdotes. Exposition text is a form of writing that explains or outlines an idea, main idea, opinion, information, or knowledge. The whole group can make a good written report, which can explain the idea of solving the problem of biodiversity and the environment. Anecdotal text is a story or story that contains a humorous nature which is usually used to convey criticism. In this study, all groups can make funny stories and convey criticism both to the community and to the government in order to preserve biodiversity and overcome environmental problems. The products made by each group obtained good results, namely in the form of digital learning animations so that readers get a clear "picture" regarding the causes, consequences, and ways to overcome the problems of biodiversity and the environment. The practice assessment of the whole group obtained good results.

The practical assessment is in the form of publication results in the form of presentations delivered by each group in front of all students and the teacher council. Daily assessment is a test to see students' literacy and critical thinking skills.

This proves that the application of the SB₂ Colla learning method as an application of problem-based learning models can improve students' literacy mastery.

Conclusions and suggestions

A. Conclusions

The conclusion of this learning innovation work is that the application of the SB₂ Colla learning method as an application of a problem-based learning model can improve students' literacy skills. This is evidenced by the completeness score above 80% in all assessment categories (writing, product, practice, and daily assessment) for both class X science and social studies.

B. Suggestions

The suggestion that the author conveys here is that collaborative learning methods can be developed again by involving other subjects so as to increase students' ability to think, solve problems and communicate in everyday life.

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