

**BILINGUAL LEARNING MANAGEMENT
OF BIOLOGY LESSON IN IMMERSION CLASS**
(A Site Study at State-Owned Junior High School 5 Purworejo)

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By:

**BAMBANG SUKIONO
NIM : Q 100100270**

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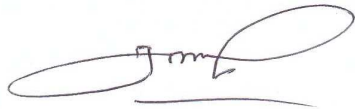
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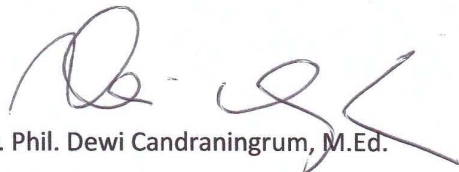
Approved by

Consultant I,



Prof. Dr. Abdul Ngalim, M.M., M.Hum.

Consultant II,



Dr. Phil. Dewi Candraningrum, M.Ed.

**BILINGUAL LEARNING MANAGEMENT
OF BIOLOGY LESSON IN IMMERSION CLASS
(A Site Study at State-Owned Junior High School 5 Purworejo)**

By

Bambang Sukiono¹,

Abdul Ngalim², Dewi Candraningrum³

¹Guru SMP Negeri 3 Purworejo

²Staf Pengajar UMS Surakarta, ³Staf Pengajar UMS Surakarta

Abstract

This research is aimed at (1) describing the characteristics of bilingual biology learning plan in immersion class, (2) describing the characteristics of bilingual biology learning implementation in immersion class, and (3) describing the characteristics of bilingual biology learning evaluation in immersion class. This research is descriptive-qualitative. The informants in this research are Principals, vice principal of curriculum, vice principal of facility and infrastructure, biology teacher, and the students who attend bilingual learning. Collecting the data uses interview, observation, and documentation. The research result involves three point (1) The arrangement of learning program such as annual program, semester program, syllabus, and lesson plan. The learning program is arranged in English, (2) The implementation of bilingual biology learning in immersion class was done with the integrated model, (3) The evaluation of bilingual biology learning in immersion class involves three kinds. (a) the evaluation of learning plan. (b) the evaluation of learning implementation. (c) the evaluation of students learning result. The evaluation of plan and learning implementation was done by the principal with the assessment supervise instrument of plan and learning implementation. The evaluation of student learning result was done by the biology teacher. The evaluation of student learning result involved four kinds. 1) vocabulary test, 2) daily test (formative test), 3) mid test, and 4) final semester test (summative test).

Key Words: bilingual learning, biology, plan, implementation, evaluation

Introduction

One of national education development policies is to develop the quality of human resource as early as possible. The quality of human resources is developed directionally, integrated, and overall through many proactive and creative efforts by the components of nation. It is intended in order to develop the young generation optimally. The national education mission is to make the national education system and climate democratic and qualified, strengthen good moral, creative, innovative, nationalism, smart, health, discipline, and acquire science and technology. The nation's quality of human resource depends on the education quality. By many strategies, the quality improvement is directed to improve the student quality in acquiring basic knowledge, foreign language, good attitude.

Globalization era gives positive inspiration to the international society. As a part of international society, Indonesia's future really needs the competitive ability among the students to compete healthy in acquiring science and technology. The science and technology influence all human life aspect in politics, economics, social, culture, and education. Therefore, every education management has to change in the strategy of education institution management and the method of conveying the learning to the students.

Learning is an interaction process among the learners, teachers, and learning sources (Sisdiknas, 2003:2). The word of bilingual as literal is two

languages in this condition is combination between Indonesian and English. Bilingual based on the Indonesian Big Dictionary (2007: 151) is the ability to use two languages correctly and relation to the two languages it self. Based on the understanding can be formulated that the bilingual learning is a learning which the material given in two languages.

The term of immersion is taken from English "immerse" which has a meaning as drowning, dipping (John and Hassan, 2006: 312). In the guidance book of immersion class implementation published by Education Office of Central Java (2004:10) explains that immersion class is a class which its medium instruction is English is held by Junior High School and Senior High School. Mathematics, Physic, Biology, Geography, History, Economics, and choice subject (art/sport) in immersion class use English as the medium instruction.

Biology is one of the science studies related to know about the nature systematically. It is not just the mastery of knowledge collection about the facts, concepts, or principles but it is also a finding process (Winarsih, 2008: 187). The circumstance is from the physical appearances, body structures, process in the body, and the relation between living creature and its environment.

Learning in immersion class is developed by bilingual learning model. The management in immersion class involves plan, implementation, and learning evaluation. Plan is a satisfy way to make the activity run well. It is done by many anticipative steps to make the gap smaller so the activity achieve the aim stated (Hamzah, 2010:2). Learning plan in immersion class are curriculum development,

learning program arrangement, preparation, human resource, and learning facility preparation. Learning program becomes the guidance for teacher in conducting the learning process at school. The bilingual learning activity in immersion class is a learning that facilitates the competence in the form of English.

Evaluation globally can be defined as systematic process to determine something value (aim, activity, determination, performance, process, people, object, etc.) based on the particular criteria in research (Dimiyati and Mudjiono, 2010:190). There are two learning evaluation function namely 1) for remedy and learning system development, and 2) for accreditation. There are three learning evaluation circumstances in learning system perspective namely a) learning evaluation program, b) learning evaluation process implementation, and c) learning result evaluation (Arifin, 2011:24).

Education institution is required to prepare the good human resource. The good human is a human that can compete and win in every competition globally. In order to compete globally is needed the language mastery especially English. Learning model with English is one of the government alternative to prepare human resource who can compete globally. The international standard project schools (RSBI) using English as medium instruction in its learning is the real step of government to prepare the qualified human resource. Through the international standard project schools RSBI is hoped to create the human who acquire science and technology and mastery in English.

In the other side, the government of Central Java had respond the development science and technology in conducting the bilingual learning model which is commonly called immersion class. In the guidance book of conducting immersion class (2004:22) published by Education Office of Central Java is explained that immersion class is a class whose the medium instruction is English. The basic of immersion class rising up is there is concern of the weaknesses in English for the secondary graduates. By immersion class, it is hoped that in the future it becomes the early stage for education unit to rise the status into the International Standard Project Schools (RSBI). The problems now are what the characteristics of plan, implementation, and evaluation of bilingual learning in immersion class are?

One of the researcher's effort to know the problems is doing the research about bilingual biology learning management in immersion class of State-Owned Junior High School 5 Purworejo. It has conducted the immersion class program independently since 2008/2009. The seriousness and the commitment of State-Owned Junior High School 5 Purworejo in conducting the immersion class is to reach the taget become the international standard project schools (RSBI). It is proved in the school mission and vision namely " achievement, independence, patriotism based on belief and God fearing".

According to the explanation above, this study has three aims. (1) To describe the characteristics of bilingual learning of biology lesson at immersion class in State-Owned Junior High School 5 Purworejo. (2) To describe the

characteristics of bilingual learning implementation of biology lesson at immersion class in State-Owned Junior High School 5 Purworejo. (3) To describe the characteristics of bilingual learning evaluation of biology lesson at immersion class in State-Owned Junior High School 5 Purworejo.

Research Method

This research done in State-Owned Junior High School 5 Purworejo located at Wirotaman Street No. 8 Kutoarjo exactly in RT 01 Rw 005, Kutoarjo, Kutoarjo sub-district, Purworejo Regency, Central Java. It is chosen as the object of the study because it is one of schools that conducts immersion class independently. The subject in this research often said "S" is participants in this study (Sutama, 2011:97). Based on the explanation above, so the research subjects in this research are principal, Vice principal, teachers, and students of State-Owned Junior High School 5 Purworejo. In this research, they are as the key persons or competence person. Meanwhile, the object of this research is the management of Biology bilingual learning of immersion class of State-Owned Junior High School 5 Purworejo.

In this research, the researcher is as the research instrument. It is intended that the researcher is as data collector (Moleong, 2006: 168). Data collection is done by (1) interview using the general interview guidance, (2) participant observation to get the complete and detail data, the researcher involves himself in the object activity researched, and (3) documentation to get the data related

to events occurred in the past namely inexpression data from interview and observation.

The qualitative data analyst used in this study is arranged data in website for description. Data are in the form of word description and sentences collected by interview, interpretation from observation, and document research. Data obtained in this study are in the written form and analyst. The data are analyzed by four steps. (1) Data Reduction by selection, simplified, and focus the data so it will be obtained. (2) Synthesis by looking for the relationship among the data including one category to another category.(3) Data Presentation is intended to find the meaning pattern and give the possible conclusion making and follow up. And (4) Making conclusion.

Result and Discussion

The management of bilingual biology learning in immersion class of State-Owned Junior High School 5 Purworejo is plan, implementation, and learning evaluation. The plan of bilingual biology learning in immersion class of State-Owned Junior High School 5 Purworejo includes curriculum development, learning program arrangement, human resource preparation, and facility and infrastructure learning.

The development of curriculum is based on the curriculum arrangement guidance arranged by BSNP and it also concerns with the school committee. The curriculum implemented in State-Owned Junior High School 5 Purworejo is the

current Education Unit Level Curriculum (KTSP) referring to National Education Standard (SNP). The curriculum of State-Owned Junior High School 5 Purworejo is developed based on the the structure of itself by adding 2 lesson times for Mathematics. Meanwhile for English, there are 2 more lesson times but it doesn't include in the curriculum structure. Meanwhile for Science in immersion class isn't added. The amount of science time allocation in curriculum has been fulfilled for science learning.

The learning program is arranged by the biology teacher including annual program, semester program, syllabus, and lesson plan. The arrangement of the learning programs is done together in workshop. It is held by the school at the beginning of the new academic year. Based on the document of learning programs can be seen that annual program, semester program, and lesson plan are arranged in English. The learning program is as the preparation in doing the learning so the learning aim can be achieved.

The development of bilingual biology learning plan is in the form of preparation the teaching material in worksheet. The worksheet is arranged by the biology teacher in English. It is as the guided worksheet. It consists of guided questions for students to find the conclusion of the material independently and the questions for exercise

The research done by Kagan (2005) in the title of In Support of a Proficiency-based Definition of Heritage Language Learners: The case of Russian. The research discussed about bilingual learning of foreign language. In the

implementation of the learning, the teacher arranged the curriculum and the material suited by the students' ability. The curriculum and the material suited in the student condition can give the support for students to improve their linguistics.

State-Owned Junior High School 5 Purworejo has prepared the human resources in the bilingual biology learning process in immersion class. Human resource problem dominants in education process, it means that human resource management is very important in learning process at school (Iif and Sofan, 2010:41). Human resource recruitment is done by the selection of students and teachers. The biology teacher chosen in teaching in immersion class is a teacher that had lived in the foreign country. Meanwhile the students are chosen based on their interest and National Examination Result (NEM) of elementary school.

State-Owned Junior High School 5 Purworejo has developed the human resource in bilingual biology learning in immersion class . The human resource developed involves the competence of principal, biology teacher, and students. To improve the English ability, the principal of State-Owned Junior High School 5 Purworejo joined in English course independently. In the other side, the principal attended English training at school every Saturday together with other teacher. This activity as facility is to improve English for biology teacher and the other teacher of State-Owned Junior High School 5 Purworejo. Meanwhile the English development of the students in immersion class of State-Owned Junior High

School 5 Purworejo through English extracurricular conducted by the school and private done by the English teacher at her house.

The facility and infrastructure of biology in immersion class has been prepared by State-Owned Junior High School 5 Purworejo including learning resource and media. State-Owned Junior High School 5 Purworejo has prepared the learning resource namely bilingual learning text book of biology published by Yudistira. The school also has provided the learning media in each immersion classroom with the facility of board, wall chart, monitor screen and LCD. The classroom also is completed by the internet connection.

The implementation of bilingual learning of biology in immersion class of State-Owned Junior High School 5 Purworejo was done with integrated model. The students got biology material by using English. Based on the observation result, it can be known that English usage orally seemed in opening, material explanation, command in doing the task, convey biology term and sentence. The English written usage appeared in the aim of learning, material summary, and the result of data experiment. Bilingual learning of biology is applied with the method of lecture, practice, discussion, and question answer. Teaching learning process is a process arranged by particular steps in order to get the expected result (Abdul Majid, 2008:103).

Bilingual biology in immersion class of State-Owned Junior High School 5 Purworejo used the method of cooperative learning. The method can develop student ability in conveying the idea although it was just in one group. Through

the cooperative learning the student ability can be developed in solving the problem. The students who have difficulty in solving the problem finally they can ask and discuss with other students who have understood without any shame feeling. The students usually feel ashamed to ask to the teacher about the difficulty. Cooperative learning needs to be developed optimally in bilingual biology learning in immersion class of State-Owned Junior High School 5 Purworejo.

The research done by Choi and Kuipers (2007) in their research journal entitled Bilingual Practices in a science Classroom: Bilingual Hispanic students' Ways of Constructing School Science. The study uses ethnography with the qualitative research. The study discusses about bilingual learning especially student activity in learning. The result shows that the students interact with the other students such as discussion about the biology material using two languages namely national language and English.

Table 1. Bilingual Biology Learning Implementation Design in immersion class of State-Owned Junior High School 5 Purworejo

Learning Design	Description
Language Design	Bilingual Biology learning in immersion class was held integrated. The learning used two languages, namely Indonesian and English. The medium of instruction uses English and repeated by Indonesian. This design is applied for all Biology materials.
Model Application/ Learning approach	a. Bilingual Biology learning in immersion class was applied by the method of lecture and question answer. A large of bilingual Biology learning in immersion class is used this design.

	<p>b. Bilingual Biology learning in immersion class was applied by cooperative learning. The students do experiment and discuss it in their own group to finish the task. This design was applied for a certain material.</p> <p>c. Bilingual Biology learning in immersion class was a student as a learning center (student centered). Bilingual Biology in immersion class was designed in order to get experience independently. This design usage was applied for a certain material.</p>
Learning Media Usage	Bilingual Biology learning in immersion class uses media which were available in the student surrounding. Media used were easy to get and it was related to the student life.

The evaluation of bilingual Biology learning in immersion class of State-Owned Junior High School 5 Purworejo involves learning plan evaluation, learning evaluation, and student learning result evaluation. Learning plan evaluation is intended to know how high the teacher achievement in arranging the lesson plan. Evaluation of learning implementation is intended to know how far the teacher success in implementing the learning in the class. The evaluation of learning result is intended to know how high the student learning success.

The principal evaluate to the bilingual learning plan arranged by biology teacher. The evaluation is intended to know how high the teacher achievement in arranging the learning plan. The evaluation of bilingual learning plan uses the instrument of academic supervise assessment. The instrument contents many aspects related to learning plan. Each aspect consists of some indicators. Each aspect has minimal score of 1 up to 5.

The success of the teacher achievement in learning plan is determined by calculating amount of score obtained and divided by the maximum total score multiply 100.

$$\text{The success level} = \frac{\text{.....}}{35} \times 100 = \text{.....}$$

The result achieved can be categorized:

<56	: not good
56 – 70	: pretty good
71 – 85	: Good
86 – 100	: Excellent

In summary, the assessment result can be seen in the table below.

Table 2. The result of Lesson Plans (RPP) assessment

No	Aspect assessed	Score	
		Grade VII	Grade VIII
1	The formulation of learning aim	5	5
2	The selection and determination of teaching material	5	5
3	Organizing the teaching material (lesson)	4	5
4	The selection of source/ learning media	5	4
5	The clarity and detail of learning scenario	5	5
6	The technique selection and formulation of learning assessment	5	5
7	The completeness of assessment instrument	5	5
	Total score obtained	34	34

From that assessment, it can be counted the success of teacher achievement in arranging the lesson plan. The total score obtained for grade VII and VIII are 34 each so the success level can be counted as following.

$$\text{The success level} = \frac{34}{35} \times 100 = 97, 14$$

From the counting above can be known that the lesson plans arranged by the Biology teacher for grade VII and VIII are categorized very good.

The principal evaluated to bilingual biology learning in immersion class implementation. The evaluation to know how high the teacher achievement in class learning implementation. Evaluation of bilingual learning implementation used academic supervise instrument of learning process assessment. The instrument contains some aspects related to learning conducting in the class. Each aspect contains some indicators. Each aspect has minimum score of 1 and maximum score of 5.

The success level of teacher achievement in the learning process determined by the calculation of total score obtained divided by maximum total score multiplied by 100.

$$\text{The success level} = \frac{\text{.....}}{100} \times 100 = \text{.....}$$

The result achieved can be categorized:

<56	: not good
56 – 70	: pretty good
71 – 85	: Good
86 – 100	: Excellent

According to the observation result and documentation obtained that the principal had assessed to the learning process done by the Biology teacher in VII A, VIII A, and VIII B. The assessment result can be seen in the table below.

Table 3. The Assessment Result of The learning process

NO	Assessed Aspect	SCORE		
		VII A	VIII A	VIII B
I	PRE LEARNING			
1	Prepare the students to study	5	5	5
2	Apreception	5	5	5
II	While Teaching			
A	Material Mastery			
1	Show the material mastery	5	5	5

2	Link the material with other relevant knowledge	4	4	4
3	Deliver material clearly based on the learning hierarchy and student characteristic	4	5	5
4	Link the material with the real life.	5	5	5
B	Learning Strategy/ Learning Approach			
1	Apply the learning based on the aim of the competency achieved and the student characteristic	4	5	5
2	Apply the learning in order	5	5	5
3	Master the class	5	5	5
4	Apply the learning visible to grow the positive habit	5	5	5
C	Using Learning Resource and Media			
1	Use media effectively and efficiently	5	5	5
2	Involving the students in using the media	5	5	5
D	Learning that appears and keep involving students			
1	Grow the student's active participation in learning that grow the student cheer and anthuatism in study	4	5	5
2	Showing the open attitude to respond the students	5	5	5
E	Process Assessment and learning result			
1	Observation the learning progress as long as the process	5	4	4
2	Applying the final assessment based on the competency (aim)	5	5	5
F	Language Usage			
1	Using oral and written language clearly, well, and correctly.	5	5	5
2	Delivering the message with the appropriate style	5	4	4
III	CLOSING			
1	Reflection/ Making summary by involving the students	4	4	4
2	Doing the follow-up by giving the guidance or activity, or task as a part of reducing/ enrichment	5	5	5
Total Score Obtained		95	96	96

Based on the result of the research, it can be counted the success of teacher achievement in the learning process. The total score obtained for grade VII is 95, grade VIII A is 96, and VIII B is 96, so the success level can be counted as follow.

1) Grade VII A

$$\text{The Success Level} = \frac{95}{100} \times 100 = 95$$

2) Grade VIII A and VIII B

$$\text{The success Level} = \frac{96}{100} \times 100 = 96$$

From the counting above can be known that the learning process applied by the Biology teacher in VII A, VIII A, and VIII B is very good.

The evaluation of learning result is intended to know how high the student learning success. The evaluation of Bilingual Biology learning result was conducted by vocabulary test, formative test, mid test, and final test. From the document obtained is known that the vocabulary test, formative test, and mid test are arranged by the teacher in English. While the final test (summative test) was arranged in Indonesian by principal achievement forum of Purworejo and summative in English was arranged by the biology teacher.

Conclusion

The management of bilingual learning of biology in immersion class of State-Owned Junior High School 5 Purworejo involves planning, implementation,

and learning evaluation. The plan of bilingual learning of biology in immersion class of State-Owned Junior High School 5 Purworejo involves the curriculum development, arranging the learning program, the preparation of human resource, and the preparation of learning facility and infrastructure. The bilingual of biology in immersion class of State-Owned Junior High School 5 Purworejo was implemented with the integrated model. The students got biology material in English.

The bilingual learning of biology in immersion class of State-Owned Junior High School 5 Purworejo can be described as follow. The material conveying used English the re-explained in Indonesian. Bilingual learning of Biology used the method of lecture, experiment, an group discussion. Bilingual learning of biology with question and answer was done by giving the cross questions related to learning material.

The evaluation of bilingual learning of biology in immersion class of State-Owned Junior High School 5 Purworejo involved learning plan evaluation, learning evaluation, and student learning result evaluation. Learning plan evaluation is intended to know how high the teacher achievement in arranging the lesson plan. Evaluation of learning implementation is intended to know how far the teacher success in implementing the learning in the class. The evaluation of learning result is intended to know how high the student learning success.

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