CLASSROOM INTERACTION ANALYSIS IN BILINGUAL SCIENCE CLASSES IN SMAN 4 DENPASAR

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ABSTRACT

This study aimed at investigating the classroom interaction types in RSBI class by using FIAC (Flanders Interaction Analysis Categories) system. FIAC system is a system that aims to measure the classroom interaction which has 10 categories, namely (1) accepting feeling, (2) praising and encouraging, (3) accepting or using ideas of student, (4) asking questions, (5) lecturing, (6) giving directions, (7) criticizing or justifying authority, (8) student-talk response, (9) student-talk initiation, and (10) silence. This study was conducted in XI. IPA 1 RSBI in SMA Negeri 4 Denpasar which consisted of thirty six students; twenty one were males and fiveteen were females. This study was carried out based on the case or phenomenon of the growth of RSBI school in Denpasar. For this reason, it is supposed that the classroom interaction of RSBI class will be different from the regular ones. The objectives of this study were to find out the classroom interaction characteristics based on the 10 Flanders categories and to find out the constraints faced by teacher and students in conducting teaching-learning process.

Key words: classroom interaction, Flanders interaction analysis, RSBI class.

1. INTRODUCTION

Recently, the government is focusing on the quality of National Education. The standards of education have been issued to achieve the quality. To cope with standards in education, the government develops a pilot project of International Standard School (RSBI), which is expected to stimulate the education quality in the global era. As the results, many schools in Indonesia are eager to develop international standard schools.

It is necessary to affirm that schools with International Standard are targeted to develop the nation value and spirit of Indonesia. Beside developing the global values progressively by introduction, recognition, and application of those values, the schools give more space for local content to be developed. In other words, an international standard school should adopt the international standard curriculum in addition to the national standard curriculum. This is based on the understanding of RSBI in "The System of Fostering of School with International Standard" in which it is expressed that the schools prepare the learners based on the National Standards of Education and have international level so that the graduates have international competitiveness ability.

In RSBI School, the medium of instruction in teaching and learning is the global language (English). The teaching and learning process must also develop the sense of curiosity and wonder, opened to the new probabilities, facilitate the freedom of creativity, and experimental approach. Therefore, schools need to work hard as well as prepare professional teachers to meet the requirements of RSBI schools.

In every senior high school that has been labeled "RSBI", students are grouped into special classes. For special classes, the lesson is taught in bilingual i.e. English and Bahasa Indonesia. Students are exposed to terms and vocabularies in English. The class instruction in English. There might be differences in terms of teaching and learning that takes place in bilingual in class.

1.1. Formulation of the Problem

This research addresses one central issue, which is what are the classroom interaction analyses of the teaching-learning process in bilingual science classes at grade XI of SMAN 4 Denpasar?

1.2. Limitation of the Problem

The obstacles and challenges to this situation is that on the effectiveness of teaching and learning. One of the considerations is conducting lessons in English. However, there are some facts suggesting that teachers are not ready to have English as the medium of instruction. Some cases as in partial immersion where teachers use English based on the difficulty portion implies that both teachers and students are not yet 'there' to consume the subject taught in English. Teachers can be expected to be confident in teaching as Bahasa Indonesia is also the students' daily language. On the contrary, teachers will possibly face problems and may feel unconfident if they have to teach in a foreign language (English).The ability of teachers to facilitate interactions is also in focus of the research observation.

Based on the identification of the problem, this research is focused on descriptions of characteristics of classroom interaction in bilingual classes.

2. METHODS

This evaluation study was conducted in SMA Negeri 4 Denpasar as one of famous high school in Denpasar. This school got its RSBI title on 2007, and starts the RSBI class from the second grade. The object under investigation in this study was the analysis of classroom interaction in RSBI class grade X1. IPA 1 of SMA Negeri 4 Denpasar. The data was taken during the teaching and learning process for about 1.5-month observation. The evaluation design is a qualitative study that unites case study of communication and discourse. It is based on an in-depth investigation of a single individual, group, or event.

According to Flanders Interaction Analysis Categories (FIAC) System, this study is done by some phases, such as data collection, data analysis, and validity and reliability of the analysis.

2.1. Data Collection

Data collection is the data that collected as the purpose for obtaining a comprehensive description about the analysis of the classroom interaction in grade XI.IPA 1 of SMA Negeri 4 Denpasar. The data used by the researcher is in the form of observation sheet, video recording, note-taking, and interview guide.

2.2. Data Analysis

Afterwards, the collected data had been analyzed in Data Analysis phase. The first analyzed step was the observation and recording of the utterances of the teacher during the teaching and learning processes. Besides taking the data through observation and recording, the researcher also took notes on the teaching learning activities to obtain data that are more comprehensive. After the recording processes, then the recordings were transcribed. The data transcriptions along with the notes taken then underwent a process of data reduction. Here the data was simplified by categorizing the utterances based on Flanders Interactions Analysis Categories System.

After being analyzed and categorized, the data underwent the process of data display. The data collected was reduced into selective and simplified categories. The coded data were then be configured by using coding system form that can be seen as follows:

Name of Observer :
Date and Time Observation :
Length of Observation :

Element Observed :

Grade Level/Subject :

Objective of Observation :

No	Utterances Category	Frequency	Percentage
1	Accepting Feeling Examples:		
2	Praising and Encouraging Examples:		
3	Accepting or Using Ideas of Students Examples:		
4	Asking Questions Examples:		
5	Lecturing Examples:		
6	Giving Direction Examples:		
7	Criticizing or Justifying Authority Examples:		
8	Student-talk Response Examples:		
9	Student-talk Initiation Examples:		
10	Silence or Confusion Examples:		

The data display and analysis were used as a basis for further discussion on the findings.

2.3. Validity and Reliability of the Analysis

The last phase is **Validity and Reliability of the Analysis.** It has a purpose to check the validity and the reliability of the data analysis by using two techniques were employed namely triangulation and inter-judge reliability.

2.3.1. Techniques triangulation

Techniques triangulation aims to compare and to recheck the validity of the information gathered on different occasions by using different devices. Here, the data triangulation was done by interviewing the students at grade XI. IPA 1 about how their teacher teaches them. Some questions like; “Does the teacher give you some praises or encourages”?, “Does the teacher give you hard questions that can’t be answered”?, “Does the teacher speak too much in the class”?, and etc. This method is aimed to collect the information about utterances used by their teacher.

2.3.2. Inter-judge Reliability

Inter-judge Reliability is the reliability checking that was done in checking the reliability of the instrument. Here, two judges were invited to check the instrument and give the result then compare it together. The analysis was only done on 100 utterances which were randomly selected as samples. According to Gronlund as it cited in Suriadi (2006), reliability is considered as the most important characteristic evaluation result, which can show the consistency of the data that makes the validity possible and it can make how much confidence a researcher can place a result. The inter-judge reliability could be formulated as the figure below:

JUDGE II

JUDGE I		Agree	Disagree
	Agree	Frequency (In number)	Frequency (In number)
	Disagree	Frequency (In number)	Frequency (In number)

(Adapted from Judgment Reliability of Criterion-Referenced Gronlound, 1985: 107 in Dianari, 2006:20 as it cited in Suriadi, 2007:34)

By using the above figure, a percentage of consistency of data has been counted through the following formula:

$$\% \text{ Consistency} = \frac{\text{Number of similar answers}}{\text{Total number in group}} \times 100$$

Source: http://downloads.ziddu.com/downloadfile/9437020/angketpengukurminatdan motivasibelajarmetodeACRS.pdf.html

3. RESULTS AND DISCUSSION

After 1.5-month observation, the researcher obtains the results of the study of what kinds and characteristics of classroom interaction in XI. IPA 1 bilingual science classes SMAN 4 Denpasar are.

There are 3 subjects that should be taught to the students. They are Biology, Chemistry, and Physics. Each subject is integrated, but still there are differences in teaching each of them. Since the way of teaching is different, the kinds of classroom interaction shown during each

session will also be different to each other. Here will be explained about the kinds of interaction of teacher and students in each subject.

- Biology

  Biology is a material that students learnt. Based on the curriculum, the portion of Biology is higher than other subjects. In grade 11, students are taught the Latin words of all biological name, the characteristics of sex, plants, and animals. Most of students seemed to be afraid in Biology because they were not confident with their ability to remember all Biology materials. That is why the most categories shown for the teacher talk was accepting feeling. Meanwhile, the student, which already felt comfortable, gave a good response by accepting the teacher suggestions. Here, the most common category was students-talk response. Besides, accepting feeling, asking questions, accepting ideas and lecturing were also common in Biology session because teacher wanted to know the comprehension of the students.

- Chemistry

  Based on the 1.5-month observation, the portion of chemistry is as much as Biology has. The difference is only on the way the teacher teaches them. In Chemistry, the teacher is most likely to give direction about the symbols of substance and the formula of each substance, rather than asking questions about what are the students going to remember. Here, the students are passive, waiting for the teacher to direct them into wherever the teacher wants. In this subject the categories that came out the most was *Giving Direction* from the teacher and *Student-talk Response* from the students.

- Physics

  Like in Chemistry, in Physics, the students have also to learn about symbols and the formula of all physic material. In Physics and Chemistry more tendencies for dealing with comprehension rather than remembering like in the Biology subject. If the students really want to master physics or chemistry subject, the students have to comprehend the formula as well as to remember the symbols. If the students only remember all formula and symbols, they might not be granted to master the physics or chemistry subject, because these two subjects really need the comprehension. Really same like chemistry, here, the students were passive, waiting for the teacher to direct them into wherever the teacher wants. In this subject the categories that came out the most was *Giving Direction* from the teacher and *Student-talk Response* from the students.

Besides the kinds of classroom interaction, the researcher also concern at the characteristics of classroom interaction. Te characteristics of classroom interaction of each meeting in immersion class have been presented of the data results in the previous part of this chapter. The interpretation of data results will be presented as follows:

In Biology classes which may be closer to students' real life, student talk-response became dominant as students could actively participate during the process of teaching and learning. It meant that the students were active enough in classroom interaction. From the result, it showed that the teacher spent a little time in giving direction and criticizing or justifying activity.

In Chemistry classes, which mainly about concepts, s and formulas, teacher talk dominated by giving verbal instructions. The teacher spent more his talking time in lecturing. He was giving facts or

opinion about content or procedure with his own ideas and asking rhetorical question to the student. It meant that lecturing was dominant activity this teaching learning time. The teacher used more direct teaching than indirect teaching in his talking time. It meant that the teacher used more direct teaching in teaching his student; for example: lecturing giving direction, and criticizing or justifying authority.

In Physic classes, the teacher used verbal language in the interaction for accepting feeling and lecturing. These were found to be high as this subject is characterized by difficult concept and theories so that teacher needs to give explanations. The teacher was still the dominant in the teaching – learning. The teacher spent more time in teaching learning process than students. He usually taught the children by using direct influence. However, the students were active enough in the classroom interaction. It can be seen the result of the students participation.

4. CONCLUSION AND SUGGESTIONS

4.1. Conclusion

As indicated by the results, the classroom interaction in bilingual classes in SMAN 4 were characterized by the types of subject matter observed. In other words, the dominant types of interactions were dependent upon the characteristics of the subject matter. In Biology classes which may be closer to students' real life, student talk-response became dominant as students could actively participate during the process of teaching and learning. This might be because that subject was not very hard to understand so that they enjoy every classroom activity in this subject. Students were most likely to give response to the teacher because of the comfortable atmosphere built by the teacher.

Meanwhile, in Chemistry classes, the dominant analysis of classroom interaction was Teacher's Talk (Giving Direction). This was maybe because the students were struggling to understand the difficult concepts in Chemistry that may bring the impact of inconvenient feeling and not very positive attitude towards the teaching and learning processes. In Chemistry, the teacher gave many directions about what the students were going to learn, and how the students were expected to do that.

Same as Chemistry, in Physics classes, the dominant was Accepting Feeling, but the number of Teacher's Talk (Lecturing) was found to be high. This may be caused by students' demotivation to learn as this subject was challenging to learn. The teacher used verbal language in the interaction for accepting feeling and lecturing. These were found to be high as this subject is characterized by difficult concept and theories so that teacher needs to give explanations.

4.2. Suggestion

Based on the conclusions above, there are some suggestions to teacher and students. They are:

1. Asking questions and let students answer them can be expected to contribute to students' success in learning. However, based on the observation, strategies used by the teachers when asking questions should be fairly distributed around the class, so that every student has the opportunity to answer the questions. It is better to make sure that the questions are well distributed and every student gets their turn to answer the question.
2. Actually, the subjects were mainly hard science that involves difficult concepts and theories. Therefore, the teacher should give more lecturing time (extra lesson) to the students because this also helps them to understand the material better.

3. During the observation, teacher rarely explain the material and it sometimes made the students confused. It was shown from their behavior such as asked their friends about the assignments, or folded their forehead that indicated they did not get the teacher's instruction.

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