The Contribution of Exposure Frequency to English to Speaking and Writing Performance of EFL Learners at Junior High School in Indonesia

Hajriana Arfah
Hamzanwadi University, Jl. TGKH. Muh. Zainuddin Abdul Majid 83619
hajriana80@gmail.com

Ahmad Zamzam
The University of Mataram, Jl. Majapahit No.62 Mataram
zamunram@gmail.com

Abstract

This study was aimed at describing the contribution of exposure frequency to English (EFE) to speaking and writing English as foreign language (EFL) learners in bilingual class setting of a state junior high school in East Lombok, which has been implementing bilingual principles (English-Indonesia) of Mathematics and Natural Science. This research is ex-post facto with correlation design. The samples were systematically selected by choosing even number of the student lists, which involved forty-six of ninety-three students of eight grade in academic year 2011/2012. Data were analyzed with regression. The calculation was done at 5% significant level. This research discovered that (1) there is a significant correlation between exposure frequency to English language and speaking performance of the students in bilingual classes by R value of .555 with probability of .00; (2) there is significant correlation between exposure frequency to English and writing performance by R value of .78 with probability of .00; (3) the EFE significantly contribute to writing performance with R Square value of .609 (60.9%); and (4) it also contribute .309 (30.9%) the students’ speaking performance.

Keywords: Exposure Frequency to English, Speaking, and Writing
1. Introduction

To improve education quality and competitiveness power in education outcomes, government tried to design an international standard school for all education levels. The inspiration was stated in education policy (UUSPN 20/2003, article 50 item 3). Ever since, a growing number of schools are involved in a pilot project that aims at establishing high quality international standard schools (Artini, 2010).

The formulation of international standard school as stated in education development plan is SNP+X. SNP which stands for national standard of education while X means that the international standard school should have outcome standard for the well competitiveness in one of nation associations, Organization for Economic Co-operation and Development or OECD (Asy’ari, 2011). Because the people in the countries and all over the world use English as a communication medium, the language is required and inserted into the curriculum of all school levels. Up to the present, the subject matters that are piloted to be taught in English in international-standard school are Mathematics and Science. According to Hudson (in Artini, 2010) key areas to gain the well competitiveness are Mathematics and Science mastery because they have been considered as the world knowledge. As the world knowledge, considerable number of references is written in global language (i.e.’ English). So, the subject classes, the classroom management and delivering lesson materials are executed through English language.

The use of English as an instructional medium in some subject matters can be expected to increase students’ competence in the language. The students get more exposure frequency to the language through listening to the teachers’ talk or reading the science and mathematics learning materials as the meaningful language inputs in the learning process in the classroom. The use of English as a communication medium in some subject matters is also a kind of Communicative Language Teaching (CLT) principles execution in the non-English class. According to Brown (2001) and Harmer (2001) that CLT can be implemented through two path ways, namely task-based and content-based instructions. In task-based, the focus is on the language mastery while in content-based, the focus is on content mastery. Task-based provides the students with the linguistic material, managed in tasks. So the concentration is on
the linguistic forms. However, content-based is constructed for any subject matters, such as history, chemistry, geography, etc. The focus is not on the form of language used by participants but on the content of subject matters in order to encourage them to participate in the classroom activities, of course, by using English as a target language. In this case, teachers’ strategy play important role to design learning experiences for the students and also requires good English proficiency. In the teaching of Biology, for example, the teacher should use English but less concentration on the linguistic forms, but its functions, as a primary medium in classroom management or delivering the instructional objectives.

The use of English in the teaching of some subject matters in international standard classes provides the students more with comprehensible exposure to the language than the regular classes. In the classes, the exposure to English is about four to five lesson hours each week overall grades in junior and senior high schools. In reality, most students cannot use the language well. Sadtono and Handayani (Jazadi, 2008) found in their surveys that the students’ proficiency in the four macro-skills in English is still low. They held the survey in sixteen junior high schools in four provinces in Indonesia. Less than fifteen per cent of them can be considered as highly proficient in the foreign language and their greatest weakness were predictably in the two productive skills, namely speaking and writing. And, the most proficient students in the classroom usually acquire more exposure to English outside.

In international standard, most instructional activities of some subject matters, such as mathematics or science class, are delivered in English although syllabus or lesson plan are written in Bahasa Indonesia. It means that in international standard school, there is a bilingual class, which serves the instructional activities in two languages, English and Bahasa Indonesia. It is different with non-bilingual or regular classes, in which the exposure to English is only in English class. It indicates that the exposure frequency to English is higher in bilingual classes than regular classes. The students in the regular classroom setting may not acquire English in other subject matters (except in English class).

According to Krashen (1999) there are two goals of bilingual education. The first is the development of academic English and school success, and the second is the development of the heritage language or first language. Good bilingual education programs achieve both goals. It means that the importance of English use in bilingual classes setting is because of, at
least, two reasons. First, it is an implementation of basic theory of CLT. Second, English is a means of communication. It is used by people in the world as a means of communication in the global era. Most people in the world speak by using English. It is why the ability of communication is very important for the students.

As stated above that the implementation of content-based instruction in bilingual class of international standard school is inspired by Communicative Language Teaching, which aims to help the students’ progress in English proficiency as well as their academic achievement development. Good bilingual education programs achieve both goals. So, this research aimed at examining the exposure frequency to English language and its contribution on oral and writing skills of the students in bilingual classes at international standard school of State Junior High School (SJHS) X Selong, East Lombok, and West Nusa Tenggara.

2. Method

The examination on the contribution of exposure frequency to English on oral and writing skills was undertaken without direct intervention because they had already occurred before conducting this research. It is the basic reason why the research design is ex-post facto as stated by Wiersma (1986) and Dantes (2007) that it is systematic and empirical inquiry in which the independent variables had already occurred and were inherently not manipulated by the present researcher.

This research study was carried out at SMPN X Selong, East Lombok, and West Nusa Tenggara in academic year 2011/2012. The sample of this research was based on Dantes’ opinion (2007) that the samples were chosen by using stratified sampling because of some considerations such as eight grades of SMPN X Selong are representative of the population. Seven grades are the first year so they lack exposure frequency to English and the third grade is of course had got higher exposure frequency to the language than the second grade because they had longer time to learn in bilingual class.

After determining the grade, the sample was chosen through simple random sampling by taking even number of the student lists of the four classes. The total number of the samples was 43% or 46 of 93 students.
There are three types of data in this research. They are exposure frequency to English language, speaking skill, and writing skill. The primary data of exposure frequency to English dealt with teachers utterances of some subject matters in bilingual classes such Mathematics, Biology, Physics, and English. They also dealt with the students’ languages in responding their teachers’ or classmates’ greetings, questions, and instructions in the learning process. They were collected by using a set of questionnaire, which was designed by using five scales adopted from Likert’s theory. The secondary data of exposure frequency to English obtained through observation related to the dimension of exposure frequency to the language in bilingual classes.

Speaking skill data are original utterances of the students recorded while they were orally producing English through speaking test. Here, picture-cued story telling through a series of picture was used as instrument to collect the data as stated by Brown (2004). In other side, writing skill data are the students’ ability in exploring their idea, taught, and feeling in the form written languages. Here, the data are students’ writing achievement of picture-cued task through a series of picture.

In this research, instrument validation was done by fulfilling some required evidences as stated by Hughes (2003) and Brown (2004). To prove content validation, the test-takers were asked to describe orally the prepared picture-cued task in the form of a series of picture and it aimed to elicit their speaking skills. The directions of the oral test were delivered orally in the classroom. The topic of the event in the series of picture leaded the students to produce narrative and recount texts And, the content of writing skill test is written text in narrative and recount. The clear direction of writing test was written in the top of the series of picture.

Another way to prove that the instruments of oral and writing skills fulfill the construct validity is to review both theoretical aspects. The construct of speaking skill is adopted from Oller’s theory (Nurgiyantoro, 2001 and Brown, 2004), which consist of some criteria and procedures (constructs). They are accent, grammar, vocabulary, fluency, and comprehension. And, the construct of writing test is emphasis on content, organization, vocabulary, syntax (grammar), and mechanics.

Furthermore, the content of questionnaire was consulted to the expert judgment at postgraduate program of Education University of Ganesha, Bali. The contents which covered
for dimensions above were broken down from Dulay’ (1982), Ellis (1986), and Ajileye (2009) theories of exposure to the target language.

The reliability of a test was examined through two approaches, namely quantitative and qualitative approach. Here, the present researcher applied qualitative approach, in the form of students-related reliability, rater reliability, and test administration reliability such suggested by Brown (2004). The procedures were ensuring that all students were well condition, using standard oral and writing rubrics offered in Nurgiyantoro (2001), Brown (2004), and Hughes (2003), and ensuring that each student had the same time and clear photocopying variations to complete the tasks and the data of speaking skill and writing skill were administered twice by using different topics. And, all instruments were consulted to the expert judgments before using them to collect the data.

The central tendency (mean) and dispersion (standard deviation) of three variables in this research was processed by using SPSS 16. Then, the score of each group of data was categorized with Norm Reference Classification. Then, the result of classification was pictured in the form of histogram. The Norm Reference Classification is presented in table 01.

<table>
<thead>
<tr>
<th>Interval</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X \geq M + 1.8SD$</td>
<td>Very good</td>
</tr>
<tr>
<td>$M + 1.8SD &gt; X \geq M + 0.6SD$</td>
<td>Good</td>
</tr>
<tr>
<td>$M + 0.6SD &gt; X \geq M - 0.6SD$</td>
<td>Average</td>
</tr>
<tr>
<td>$M - 0.6SD &gt; M - 1.8SD$</td>
<td>Low</td>
</tr>
<tr>
<td>$X &lt; M - 1.8SD$</td>
<td>Very low</td>
</tr>
</tbody>
</table>

There were four prerequisite tests that should be conducted before testing the hypothesis. They were: (1) normality test which was done by using Kolmogorov-Smirnov formula, (2) Linearity and the meaningfulness of regression line test, (3) autocorrelation test, and (4) heteroscedasticity test. All the calculation was done by using SPSS 16 for Windows.
The hypothesis was tested by using simple regression to know the correlation and contribution of exposure frequency to oral and written competency. The hypothesis testing was done by using computer program SPSS 16. The calculation was done 5% significant level.

3. Finding

Data description has function to describe the group of data in term of the calculation of central tendency and dispersion. Here, there were three types of data, namely: data of exposure frequency, data of speaking skill, and data of writing skill. Here, the calculation was done to find mean and standard deviation.

Based on descriptive analysis, it was known that the mean of students’ speaking skill=139.76 and the standard deviation=7.36. Then, the classification was presented in table 02.

<table>
<thead>
<tr>
<th>Table 2. Category of Students’ Speaking skills in Bilingual Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>X≥141.7</td>
</tr>
<tr>
<td>141.7&gt;X≥122.51</td>
</tr>
<tr>
<td>122.51&gt;X≥103.29</td>
</tr>
<tr>
<td>103.29&gt;X≥84.1</td>
</tr>
<tr>
<td>X&lt;84.1</td>
</tr>
</tbody>
</table>

Based on the table, it was known that mostly students’ speaking skill fell at average category with 22 frequencies. It was then followed by Low category with 11 frequencies. Next was Good category with 10 frequencies. After that, it was very good category with 3 frequencies. Here, there was no students’ speaking skill categorized into very low.

<table>
<thead>
<tr>
<th>Table 3. Category of Students’ Speaking skills in Bilingual Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
</tbody>
</table>

Based on descriptive analysis, it was known that the mean of students’ writing skill = 201.69 and the standard deviation = 16.07. Then, the classification was showed in table 3.

In the table, it was known that mostly students’ writing skill fell at average category with 17 frequencies. It was then followed by Low category with 15 frequencies. Next was Good category with 12 frequencies. After that, it was very good category with 2 frequencies. Here, there was no students’ writing skill categorized into very low.

Based on descriptive analysis, it was known that the mean of exposure frequency to English is 112.9 and the standard deviation is 12.69. Then, the classification was presented in the table 4.

**Table 4. Category of Exposure Frequency to English in Bilingual Class**

<table>
<thead>
<tr>
<th>Interval</th>
<th>Frequency</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>X ≥ 224.53</td>
<td>2</td>
<td>Very Frequent</td>
</tr>
<tr>
<td>224.53 &gt; X ≥ 209.3</td>
<td>11</td>
<td>Frequent</td>
</tr>
<tr>
<td>209.3 &gt; X ≥ 194.85</td>
<td>18</td>
<td>Average</td>
</tr>
<tr>
<td>194.04 &gt; X ≥ 178.85</td>
<td>15</td>
<td>Seldom</td>
</tr>
<tr>
<td>X &lt; 178.85</td>
<td>0</td>
<td>Very Seldom</td>
</tr>
</tbody>
</table>

Based on the table, it was known that mostly exposure frequency fell at average category with 18 frequencies. It was then followed by seldom category with 15 frequencies. Next was frequent category with 11 frequencies. After that, it was very frequent category with 2 frequencies. Here, there was no frequency categorized into very seldom.
Then, before hypothesis testing was conducted, there were four prerequisite tests that should be conducted. The tests were normality test, linearity and the meaningfulness of regression line test, autocorrelation test, and heteroscedasticity test.

Normality test in this researched was administered by using Kolmogorov-Smirnov test. This test was done to three groups of data, namely: speaking skill group, writing skill group, and exposure group. The calculation was done by using SPSS 16 for Windows and the result can be presented in table 5.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Probability Coefficient</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure</td>
<td>.976</td>
<td>Normal</td>
</tr>
<tr>
<td>Speaking skill</td>
<td>.774</td>
<td>Normal</td>
</tr>
<tr>
<td>Writing skill</td>
<td>.716</td>
<td>Normal</td>
</tr>
</tbody>
</table>

The group of data was considered to be normal if the probability coefficient was higher than 0.05. From the table 5, it was known that all groups of data have probability coefficient which was higher than 0.05. It means that all groups of data were normal in distribution.

Furthermore, the linearity and the meaningfulness of regression line were tested to know whether or not the independent variable is linear to dependent variables. The calculation was done by F test by using SPSS 16 for Windows. The result of the calculation can be presented in the table 06.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$F_{Linear}$</th>
<th>$F_{Dev from Linearity}$</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Y1</td>
<td>46.088 .00 .552 .911</td>
<td>Linear</td>
</tr>
<tr>
<td>Y2</td>
<td>17.177 .001 .828 .680</td>
<td>Linear</td>
<td></td>
</tr>
</tbody>
</table>

Note:
X = Score of Exposure Frequency to English
Y1 = Score of Speaking skill
Y2 = Score of Writing skill
The result of linearity test was shown by Dev. From Linearity, meanwhile the result of the meaningfulness of regression line was shown by linearity. Independent variable was linear to dependent variable if its probability value were higher than 0.05. Meanwhile, regression line is said meaningful in detecting regression direction if its probability value were lower than 0.05. From the result of linearity and the meaningfulness of regression line on table 6, the value of F linearity with p<0.05 and for F Dev. From Linearity with p>0.05. It means that the relationship of exposure, speaking skill, and writing skill was linear and meaningful.

Then, autocorrelation test was administered by using Durbin-Watson test. The calculation was done by using SPSS 16 for Windows and the result was presented in the table 7.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Durbin-Watson</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Y1</td>
<td>1.966</td>
<td>Free from Autocorrelation</td>
</tr>
<tr>
<td>X Y2</td>
<td>1.648</td>
<td>Free from Autocorrelation</td>
</tr>
</tbody>
</table>

Variable was considered to be free from autocorrelation if the value of Durbin-Watson (D-W) were higher than Du (D-W>Du). From the table 4.20, it was known that the value of D-W for speaking skill were 1.966 and for writing skill were 1.648. From the table, it was acquired that the value of Du was 1.57 for N= 64 (interpolation to 45). It means Du is lower than D-W. So, it is concluded that the variable was free from autocorrelation.
Heteroscedasticity test was done by observing sciatic point in the scatter plot. The scatter plot was made by using SPSS. The result is presented in figure 1 and 2.

From both scatterplots, it was known that the scedastic points were separated well and they did not build certain form. It means that there was no heteroscedasticity was detected.

Then, hypothesis testing in this research was done by using Simple Regression formula. This formula was chosen because there was only one independent variable. The calculation was done by using SPSS 16 for Windows and the result can be presented in the table 8.
4. Discussion

This part deals with the elaboration about exposure frequency and quality to English language and its relationship with speaking skill and writing skill of the students in bilingual classes of pilot project of international standard school in East Lombok.

Exposure frequency to English deals with the frequency of the language use orally or in written form by the school participants in the bilingual classes in the target school. Exposure frequency also relates to how often the students listen to the language and read any English documents. As stated by Ellis (1986) that people with more exposure to the target language are expected to acquire greater familiarity with the target language. The target language in bilingual class is English because it is as a primary communication medium for some subject matters such Mathematics, Biology, and Physics. It is hoped that the academic achievement development of the subject matters as well as their language increase because the exposure to the language is claimed as language input and oral and writing skills are claimed as the product.

According to Dulay (1982) that with no exposure at all, no learning can take place. It indicated that the success in learning English in this country depend on how often the language is exposed to the language learners. It was proved in this research that there is a significant contribution of exposure frequency to the language to writing skills of the students.

The correlation between exposure frequency to English (EFE) and speaking skill of the students in bilingual classes, which provided the students with equal exposure to English and Bahasa Indonesia in the teaching and learning process inside the classroom, is also significant.

Table 08 Result of Hypothesis Testing

<table>
<thead>
<tr>
<th>Variable Relationship</th>
<th>Regression Line</th>
<th>Correlation Coefficient</th>
<th>Determination</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>X to Y1</td>
<td>$\hat{Y} = 74.83 + 0.322X_1$</td>
<td>.555</td>
<td>.309</td>
<td>30.9%</td>
</tr>
<tr>
<td>X to Y2</td>
<td>$\hat{Y} = -85.56 + 0.984X_2$</td>
<td>.78</td>
<td>.609</td>
<td>60.9%</td>
</tr>
</tbody>
</table>
It was proved with the coefficient correlation value 0.555 in significant level 5%. And, the contribution of EFE in the speaking skill, which was analyzed by using SPSS 16 with simple regression, found that the R-square value is 0.309. It was then transferred into percentage became 30.9%. It means that EFE contributed 30.9% on speaking skill of the students. And, there are 69.1% because of other variables, which are not investigated in this study.

The data showed that the contribution amount of exposure frequency to English to speaking skill is different with writing skill of the students in pilot project of international-standard school. It indicated that the writing activities in the bilingual classes are lower than students or teachers oral activities. The execution of their linguistic competences is higher in oral than in written. It can be proved based on the students’ perceptions of exposure frequency to English through oral instructional activities and written instructional activities.

The data showed that in Mathematics class, the most students who were exposed through speaking/oral instructional activities (4.31) are higher than in written (the average 3.46). In Biology class, the average of exposure frequency through oral instructional activities 4.60 while through written activities such as whether the students wrote their teacher or classmate explanation in the learning process, the average is 3.58, which indicated that oral instructional activities are higher than written in Biology class. These phenomena also happened in Physics and English classes. The average of overall classes also proved that the average of oral instructional activities 4.61, which is categorized into very high exposure, is higher than written instructional activities 3.84, which is categorized into high. These are proof that English proficiency is also influenced by the type of exposure given to the language learners.

In the language learning process, to become successful language leaners, getting high exposure to the target language is most important to get the high language input (Hoffmann, 1991). When the language input is higher in oral, of course, the output is also and because of internal processing mechanism, which is known by execution (Clark & Clark, 1977) influence the output quality. The quality of their performance in the execution process, of course, is determined by the quality of exposure and internal processing mechanism. In language learning process, it is known as a mental gymnastic (Stern, 1983) or a mental exercise (Brown, 2000) in which language learners execute their competence become their performance.
5. Conclusion

Based on the data analysis results, the conclusion can be formulated as follows.

1. There is a significant correlation between exposure frequency to English language and speaking skill of the students in bilingual classes of junior high school. It was proven by R value of .555 with probability of .00 at 5% significant level.

2. There is significant correlation between exposure frequency to English and writing skill of the students in bilingual classes of junior high school. It was proven by R value of .78 with probability of .00 at 5% significant level.

3. There is a significant contribution of exposure frequency to English on speaking skill of the students in bilingual classes. It was shown by R Square value of .309 and probability of .00. The value of R Square was then transfer into percentage to be 30.9%. It means that exposure frequency to English contribute 30.9% on students’ speaking skill.

4. There is a significant contribution of exposure frequency to English on writing skill of the students in bilingual classes. It was shown by R Square value of .609 and probability of .01. The value of R Square was then transfer into percentage to be 60.9%. It means that exposure frequency to English contribute 60.9% on students’ writing skill.

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