From the Classroom to the Living Room: Home-Based Learning to Improve Students' Achievement in English Learning amid Pandemic

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ABSTRACT

The goal of the study was to see how successful Home-Based Learning (HBL) is for senior high school students during Corona Virus Disease 2019 (Covid-19). The researcher looked at the students' performance in pre-test and post-test between the controlled and experimental groups, as well as the significant difference between the two groups, to determine effectiveness. The study used a quantitative design, the students were placed into two groups for data collection: the controlled group and the experimental group. A pre-test and a post-test were given to both groups. The normality distribution test, homogeneity variance test, paired sample correlation test, and to test the effectiveness of HB. The hypotheses testing was needed, therefore paired sample t-test was used to examine the raw data. According to the calculations, the experimental group's post-test mean score was 64.33, compared to 46.00 for the control group. In addition, the paired sample t-test is used to assess hypotheses. The significant value was calculated using SPSS 16.0 and was found to be (3.800>2.145). This demonstrated that the home-based learning program was successful. This research was significantly unique as it did not only focus on the causes of online home-based learning but brought into light its effectiveness.

Keywords
Classroom
Livingroom
Effectiveness
Home-based Learning

Introduction

At the end of 2019, a virus outbreak resulted in a global pandemic of COVID-19 [1]. The virus has impacted people all around the globe by causing mass hysteria, economic burden, and financial loss [2]. The outbreak caused countries all around the globe to take various measures to affect the health field but also other fields as well such as economics and education. This phenomenon occurs across the globe, COVID-19 caused a new mechanism of learning as the educational activity was done through online or a network system which is practiced without face-to-face meetings but only practiced via distance learning system [3,4].

The new policy caused complications including the availability of digital learning technology and the proportion of network access, teaching mode, and parental support. It is severe for underprivileged families who experience not only intermittent learning but also conceded nutrition, childcare complications, and more [5,6]. Even though the policy is in line with the vision of industrial revolution 4.0; however, the current situation can be seen as an uncontrolled situation as there is unlimited freedom in learning [7]. To undergo online English learning and to engage the students and online learning, a variety of mobile applications and learning platforms are utilized [8,9].

The effect of COVID-19 on education could be seen through teaching methodology, teaching activities, teaching materials, and also network use. For instance, in senior high school, the English teaching and learning activities were done through online home-based learning. Home-based learning by utilizing technology and empowering the surrounding environment is very crucial. This is because there is a huge importance of English acquisition in students' lives both in their professional and personal life. Nowadays, it is intended for students who cannot study with the physical presence in the school area for health reasons.

The insufficient research regarding the stated problem was seen as a motivation that encouraged this research to be done. Instead of discussing the factors and the methodology of home-based learning. So, the main question emerged "Is it effective to implement home-based learning?". To find the answer the researcher would have broken down in more detail questions as; 1) What is the students' performance in pre-test and post-test between control and experimental groups? 2) Is there any significant difference between the pre-test and post-test of the control and experimental groups?

The research aimed to identify the effectiveness of home-based learning since COVID-19 is a boundary so the physical interaction is regulated very strictly limited. It is also aimed to bring into light not only the cause of the online home-based learning or the factors affecting the activity but it is in the researcher's best intention to identify the effectiveness of the home-based learning academically.

Literature Review

The term 'home-schooling' was first introduced by John Holt in the USA to address the new evolution in education, home- schooling' which is understood as the term for learning out of school [10](Hanackova, 2015). According to Ref. [11], home-based learning or also known as home-schooling, home education or home-based education is a form of informal education offered to children by their parents. During the home-based learning, parents or tutors were actively involved in both online and physical lessons and were in charge of the techniques used and exploration during the lesson. Meanwhile, online home-based learning is defined as the application of technology as a fundamental component of teaching and learning [12]. However, as mentioned by Ref. [13[, there were two sides to the method which were an alternative educational institute and conventional use of home in children's education. According to the statement, online home-based learning involves not only parents but also professional educators in teaching and learning activities that are supported by technology in the house.

In this current pandemic, reducing mobility must be carried out including at the school. Learning in the classroom is moving to the living room. According to Ref. [14], due to the government's order for social distancing, the way of teaching and learning has been shifted. As mentioned by Ref. [15] the application of technology became very crucial especially in terms of English teaching as there were a lot of media and platforms that could be utilized by both teachers and students. In the study "Is the online learning good amid COVID-19 pandemic? The case of EFL learners" it was stated that the learners' perception of online learning in the middle of COVID-19 was good because the learner perceived online learning was very helpful even though there were some issues regarding the online home-based learning such as internet access and financial issues [16-18].

This research is anchored on several theoretical frameworks from some experts. The general theoretical perspectives would guide this research. Firstly, this research is anchored by Vygotsky's Social Development Theory was published in [19]. This theory's central theme is social interaction. Vygotsky assumed that a child's cultural development occurred twice, first on a social level and then on an individual level, because social interaction is so important in cognitive development.

Second, Bruner's Constructivism philosophy was a strong supporter of this study. Bruner's hypothesis states that thinking is the product of cognitive development. The intelligent mind is the outcome of a "generic coding system that permits one to move beyond the data to fresh and potentially profitable predictions" gained through experience. As a result, youngsters must learn to express "recurrent regularities" in their environment as they get older. So, according to Bruner, important learning outcomes include not only the traditional culture of notion, categories, and problem-solving but also the ability to "invent" these things

for oneself. The relationship between innate human skills and "culturally developed technology that serve as amplifiers of these talents" is central to cognitive development. These culturally invented technologies include not only visible items like computers

Method

This research adopted a quantitative approach with an experimental design that applied true experimental with the usage of post-test and pre-test [20]. The research involved eleventh-grade students of senior high school students in Tanjung Redeb City, Berau, Kalimantan Timur, Indonesia. The sample was 30 respondents who were chosen through cluster sampling among the samples, then grouped into experimental and controlled groups.

The test used was an English Test which compiled 25 multiple choice questions consisting of 20 questions from the English test and 5 questions from the Neale Reading Test. The data collection was done in three main stages which included a pre-test, treatment, and post-test. The scoring was automatically computed using the Google Form. The researcher next computed the score using the Kolmogorov-Smirnov formula to calculate normality distribution and the measured homogeneity samples variance using the Leven test finding mean and then demonstrated hypothesis testing using Paired Sample t-test formula [20].

Result and Discussion

This respective part elaborates research problem in the introduction. The researcher followed some statistical tools in analyzing the data gathered as below;

A. Test of Normality Distribution

The normal distribution test is to determine whether or not the results of the tests were normal, if the significant value (Sig) is greater than 0.05, the data is deemed normally distributed. The results were shown below.

Table 1. Test of Normality Distribution on Control and Experimental Group

One-Sample Kolmogorov-Smirnov Test			
N	30	Control	Experimental
Normal Parameters	Mean	53.333	49.33
Kolmogorov-Smirnov Z		.647	.442
Asymp. Sig. (2-tailed)		.797	.990

According to Table 1, Asymp. Sig. (2tailed) of pre-test data in the control group is 0.797. Because the significance value of 0.797 is more than 0.05, the test can be assumed to have a normal distribution. The pre-test data of the experimental group is 0.990. Because the significance value of 0.990 is more than 0.05, the test can be assumed to have a normal distribution.

From the Classroom to the Living Room (Kamaliasari, et al.)

Test of Homogeneity Variance

Following the normal distribution test, the homogeneity of variance test was performed. The Levene statistic test was used to perform the test of homogeneity. The significance of the data must be greater than 0.05 to locate homogeneous samples, and the output displayed in table 3 is the outcome of homogeneity variances.

Table 2. The Result of Homogeneity Variances

	Levene Statistic	df1	df2	Sig.
Experimental Group	.678	1	28	.417
Controlled Group	2.017	1	28	.167

Based on Table 2, in the experimental group, the significance value is 0.417 which is higher than 0.05. This indicated that the variance data is homogeneous. While the control group, the significant value is 0.167 which is higher than the level of determining significance which is 0.05. The Levene Statistic in the controlled group is 2.017, the value is bigger than Levene Statistic in the experimental group. As a result, it can be concluded that the respondents in the controlled group are more heterogeneous than the experimental group. Based on the results of both tests, it can be summarized that the respondents vary in both groups. This may occur because of the style of learning, activeness, and participation during previous lessons.

B. **The students' performance in pre-test and post-test between control and experimental groups**

This data analysis was calculated to find the detailed descriptive statistical both pre-test and post-test in the experimental and control group

Table 3. Mean Performance of Pre-Test and Post-Test Example

Group		Mean		Std. Deviation
		Score	Std. Error	
Experimental	Pre-Test	53.33	4.130	15.99
	Post-Test	64.33	3.837	14.864
Controlled	Pre-Test	51.00	4.810	18.631
	Post-Test	46.00	3.625	14.040

Based on table 3, it is found that the experimental group got a mean of 53.33 and a standard deviation of 15.99 during the pre-test. While, during the post-test, the experimental group got a mean score of 64,33 and a standard deviation of 14.864. The respondents' scores got improved after the home-based learning treatment. Meanwhile, a controlled group got a pre-test mean score of 51.00 and a standard deviation of 18.631. The mean score for the post-test is 46.00 and the standard deviation is 14.040. Based on the statistic calculation above, it

answered the question that "the results of mean performance in pre-test and post-test between experimental group and control group varied". However, it was to present the situation if home-based learning did not be practiced during the outbreak of the global pandemic.

C. The Result of Paired Sample Correlations

After the data was collected through pre-test and post-test, the data was analyzed statistically to find the correlation between pre-test and post-test.

Table 4. The Level of Correlation

		N	Correlation	Sig.
Pair 1	Experimental Group	30	.738	.002
Pair 1	Controlled Group	30	.535	.040

Legend:	Excellent	0.800-1.00
	Very good	0.600-0.800
	Good	0.400-0.600
	Fair	0.400-0.600
	Poor	0.200-0.400

The statistical analysis result on paired samples correlations of the experimental group as shows that the correlation is 0.738 which is very good with a probability of 0.002. The statistical analysis result on paired samples correlations of the controlled group shows that the correlation is 0.535 which is good with the probability of 0.040.

D. Hypothesis Testing

This data analysis was to illustrate the significant difference between pre-test and post-test between control and experimental groups. The following table shows the findings:

Table 5. The difference of Pre-test and Post-test between Experimental and Controlled Group

Group	t	Df	t-table	Sig. (2-tailed)
Experimental	3.380	29	2.045	.002
Controlled	1.191	29	2.045	.253

From the result above, the t-obtained was 3.380 which is higher than t-table. The analyzed data is correlated with Ref. [17] finding which stated that the learners' perception of online learning is good. The home-based learning during the pandemic very much depends on online technology and the fact that online home-based learning is not fairly accepted but also effective in improving one's education.

While the control group shows, the t-count obtained was 1.191 which is lower than t -table 2.045. The analyzed data shows that avoiding home-based learning during the pandemic will cause a diminishing effect on respondents' achievement scores. This is proof that home-based learning practiced for senior high school students was effective and helpful. This result

is justified by the report of Ref. [11] which stated that students who undergo homeschooling score above average on achievement tests despite the parents' support.

The data is interpreted by using the value of t- obtained and significant value (Sig). This data is used to get the final result and to test the hypothesis mentioned. In analyzing the data, the researcher compared the t-count to the t-table. The null hypothesis (Ho) is rejected if the t-count is greater than the t-table. Meanwhile, if the t-count is less than the t-table, the null hypothesis (Ho) is accepted. Based on Table 5, the result of the paired sample T-test is shown. The number t-count is 3.800 and the t-table is 2.145. While the significance value is lower than 0.05. So, Ho is rejected and Ha is accepted. Concerning the result of the analyzed data, Ha is accepted which stated that there is a significant difference between the pre-test and post-test of the control and experimental groups.

The research finding was jibe with the main theory which anchored this research Social Development Theory by Lev Vygotsky and Constructivism theory by Gerome Bruner. The theories are implied that using thinking will lead to children's cognitive development. The fundamental term of social development or known as a sociocultural learning theory is the use of thinking cannot be separated from the influence of the socio-cultural environment. The sociocultural environment can give impact the complexity of the abilities possessed by each individual.

Based on both theories, the researcher believes that several things need to be considered in the learning processes are;

- First and foremost, children should have a variety of possibilities to develop their zone of proximal development or potential through learning and development in their learning activities.
- Rather than actual development, learning should be related to potential development.
- Rather than developing intra-mental abilities, learning focuses on employing tactics to enhance inter-mental abilities. Children are given extensive opportunities to integrate the declarative knowledge they have learned with procedural knowledge to perform tasks and solve problems.
- The process of learning and learning is not just transferal, but rather a co-construction.

In this learning theory, the teacher's position is as a motivator who provides stimulation so that students are active and have a passion for thinking. A teacher also acts as a facilitator, who helps to solve a problem when the students encounter some obstacles in the thinking process. The teacher's role is also as a manager who manages learning resources. Another function, a teacher is an appreciator who provides appreciation to student achievements, to increase higher motivation among students themselves. In essence, students can solve their problems to build knowledge.

Refers to the Vygotsky and Bruner theories, which were an attempt to explain consciousness as the end product of socialization. The researcher inferred that knowledge is social, constructed from cooperative efforts to learn, understand, and solve problems. Knowledge is constructed not only in the school building but also in social life wherever we are, even in the house with our self-regulation in learning. Thus, students learning about the environment affected the unique ideas and understandings they construct about the world. Home-based learning might students experience the place more extremely and think more critically about the societal norms and power structures surrounding them. Home-based learning helps the more in-depth student, and teacher experiences encourage students to examine power structures critically and strive for more profound learning experiences.

Conclusion

The research was done mainly to identify the effectiveness of home-based learning among senior high school students since the Covid-19 attack. This study focused solely on academic achievement; nevertheless, statistical data analysis revealed that:

- The students' performance in pre-test and post-test differ between the control and experimental groups.
- This means that the experimental group's weighted mean score during the pre-test was slightly higher than the control group.
- The t-test was significantly higher than the t-table during the post-test, implying that there is no significant difference between the control and experimental groups' pre-test and post-test.

Suggestions

In the light of the finding, the conclusions were drawn that home-based learning is an effective method to be used to ensure the ongoing students' education during the pandemic. Therefore, some recommendations are conveyed;

- Home-based learning can only be effective if the students are willing to actively participate in classes and are included in every activity. So, it is highly suggested to the students especially the high school students to stay alert to every class and material provided by the teacher. Being ignorant to help and tutor offered by the teacher during the stay-at-home learning will cause a major drawback, especially in terms of scores.
- The practiced home-based learning during the pandemic required extra work for the teachers not only in terms of material development but also in terms of students' understanding of the topic taught. To identify whether the approach is suitable or not, doing quick quizzes and comparing them will help. It is also very crucial for the teacher to be creative to uplift the 'classroom' overall mood.

From the Classroom to the Living Room (Kamaliasari, et al.)

- Parents' involvement and support are very vital in home-based learning. As the students' tutor at home, building a good rapport with the students will help to encourage students' participation in home-based learning. It is also important, to build good communication with the teachers to ensure the healthy growth of the students' education.

Conflict of Interest

We declare that there is no conflict of interest.

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