

THE EFFECTIVENESS OF THE SCIENTIFIC LEARNING APPROACH WITH SUGGESTOPEDIA IN LEARNING VERBS IN THE JAPANESE CLUB EXTRACURRICULAR OF SMAN 21 JAKARTA

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Abstract. This research is motivated by a problem experienced by SMAN 21 Jakarta teachers and students in the extracurricular activity Japanese Club. This extracurricular activity is participated by students ranging from 10th to 12th grade with differing backgrounds in the Japanese language. Moreover, the goal in which a student joins the club is often to informally train their Japanese language proficiency in a safe pressureless environment after they're tired of their formal education. Despite that, on the other side, the students' goal is also to effectively gain knowledge. Both of these factors create a problem in which a teacher has to create a difficult balance between an effective lesson and a comfortable non-pressure environment. For that problem, the scientific approach and Suggestopedia is thought to be the solution. The Scientific Learning approach has the characteristics where students are active in seeking their own knowledge, while Suggestopedia is a method that puts an emphasis on creating a comfortable studying environment for students to study without pressure. The goal of this research is to find out regarding the effectiveness of Scientific Learning approach and Suggestopedia method in the Japanese Club extracurricular of SMAN 21 Jakarta. This research's scope is limited to the class of basic Japanese verbs. The research method used in this research is pre experimental with one group pretest-posttest design. The population used for this research are the students of SMAN 21 Jakarta, with the sample of students who participated in the extracurricular activity Japanese Club. The instrument for this research is a test. From the results of the research data analysis, it was found that the t-test value is 5.94, with a significance level of 0.05 and degrees of freedom (df) = 5, yielding a t-table value of 2.57. Therefore, there is an effectiveness of the Scientific Learning approach combined with Suggestopedia in teaching verbs in the Japanese Club extracurricular activities at SMAN 21 Jakarta.

Keywords: Extracurricular, *Scientific Learning Approach*, *Suggestopedia Method*

INTRODUCTION

In education, teachers are one of the key factors that determine students' success. Thus, in the teaching process, teachers are not only required to deliver subject material effectively but also to actively engage students in the learning process and enhance their motivation to learn. Teachers are tasked with guiding and directing students' learning activities to achieve educational goals. Additionally, teachers also play roles as educators, instructors, and mentors (Nurhayati, 2016).

To create an effective learning environment, teachers need to design strategies that facilitate students in developing their potential. One such strategy is by encouraging students' interest in the learning material being studied. According to Suryabrata (2011:14), students' learning interest can be enhanced by fostering stimuli related to the elements that form interest, which are: (1) students' attention to the subject matter, (2) students' enjoyment of the subject matter, and (3) students' motivation or drive to be interested in the subject. To implement the right strategy, teachers need to consider the characteristics of students in the extracurricular environment. Based on observations conducted with students participating in the Japanese Club extracurricular activities at SMAN 21 Jakarta, it was found that students face difficulties in absorbing material that is delivered systematically. This is primarily because many of them are already tired from the formal learning

process they go through in their high school day-to-day. According to the students, they join extracurricular activities with the expectation of a comfortable and enjoyable learning environment, but also one where they can gain knowledge. Extracurricular activities are educational activities conducted outside regular class hours, designed to support the development of students in line with their needs, potential, talents, and interests through activities specifically organized by students and/or educators who are qualified and authorized within the school (Wiyani, 2013: 108).

According to the author, the characteristics of a comfortable and enjoyable learning environment align with the Suggestopedia learning model. Suggestopedia derives from the term "suggestology," which is the study of non-rational or non-conscious influences on humans (Richards, 1999:142). This method was developed by Georgi Lozanov (1978), a physicist and psychotherapist from Bulgaria. Suggestopedia believes that the human brain can process a large amount of material when provided with the right learning conditions, including relaxation and granting control and authority to the teacher (Nurhayati, 2016). In addition, teachers also need to consider educational strategies relevant to this curriculum, particularly strategies that encourage students to be more active in the classroom or student-centered learning. This strategy aligns with the scientific approach. The scientific approach is a learning process designed in such a way that it enables students to actively construct concepts, laws, or principles through several stages, including observing (to identify or discover problems), formulating problems, proposing or formulating hypotheses, collecting data using various techniques, analyzing data, drawing conclusions, and communicating the concepts, laws, or principles discovered (Sufairoh, 2016).

The Suggestopedia learning model can provide a comfortable and enjoyable learning environment, which accelerates the learning process, motivates students, and facilitates the absorption of material. In this context, Suggestopedia serves as a method that motivates and conditions students to actively participate in student-centered learning activities. With advancements in technology, such as the internet and social media, engaging learning media can now be easily accessed. This has made the Suggestopedia learning model much more accessible for teachers to implement in the classroom.

RESEARCH METHOD

1.1 Scope of Research

The scope of this research is education and teaching, specifically the teaching of the Japanese language for the students of SMAN 21 Jakarta who participated in the Japanese Club extracurricular activity.

1.2 Time and Place

This research is carried out from 31st of October 2024 to the 8th of November 2024 at SMAN 21 Jakarta.

1.3 Method and Design

The design used for this research is a pre-experimental design, specifically the one-group pretest-posttest design. The researcher utilized data from an experimental group that would undergo a treatment. Before the *treatment*, the experimental group would be asked to complete a pretest prepared by the researcher to assess their initial condition. Subsequently, the experimental group would receive *treatment* using the Scientific Learning approach with the Suggestopedia model in the learning activities.

After receiving the *treatment* through two face-to-face sessions conducted offline, the experimental group would be asked to complete a post-test. The average scores from the *post-test* and pretest in the experimental group would then be compared to determine whether there was a significant improvement in their ability to form sentences using Japanese verbs after receiving the treatment. The design paradigm is illustrated as follows:

$$O_1 X O_2$$

Fig. 1. one-group pretest-posttest design formula.

Details:

X : Treatment
 O1 : *Pre-test*
 O2 : *Post-test*

The method paradigm used in experimental research is described in the table above as having a treatment effect, namely = (O2-O1).

1.3.1 Population

According to Sugiyono (2017:215), a population is a generalization area consisting of objects or subjects with certain qualities and characteristics determined by the researcher to be studied and then concluded. A population is not limited to humans but also includes other objects and natural phenomena. It is not merely the quantity of objects or subjects being studied but encompasses all the characteristics or traits possessed by the subjects or objects.

According to Suryani and Hendryadi (2015:190-191), a population is a group of people, events, or objects that have specific characteristics and are used as the object of research. The number of units in a population is denoted by the symbol *N*. The population in this study consists of students at SMA Negeri 21 Jakarta who participate in the Japanese Club extracurricular activities.

1.3.2 Sample

A sample is a subset of the total characteristics possessed by a population (Sugiyono, 2017:81). Determining a sample requires an appropriate sampling technique. In this study, the sampling technique used is purposive sampling. According to Sugiyono (2017:85), purposive sampling is a method of selecting samples based on specific considerations.

The sample used in this study consists of six students from SMA Negeri 21 Jakarta who participate in the Japanese Club extracurricular activities, serving as the experimental group. This selection was based on direct observation by the researcher, who also serves as a teacher, and interviews with students involved in the extracurricular activity. These findings indicate that the Japanese Club extracurricular activities are suitable and conducive for applying the Scientific Learning approach with the Suggestopedia method.

1.4 Variables of Research

A research variable is anything determined by the researcher to be studied in order to obtain information about it, which can then be used to draw conclusions (Sugiyono, 2017:38). This study includes two types of variables:

1.4.1 Independent Variable

According to Sugiyono (2017:39), an independent variable is one that influences or causes changes in the dependent variable. It is also referred to as a stimulus, predictor, or antecedent variable. In this study, the independent variable is the Scientific Learning model with the Suggestopedia method.

1.4.2 Dependent Variable

According to Sugiyono (2017:39), a dependent variable is one that is influenced or changes as a result of the independent variable. It is also known as the output, criterion, or consequent variable. In this study, the dependent variable is the improvement in Japanese language skills among students of SMA Negeri 21 Jakarta who participate in the Japanese Club extracurricular activities.

1.5 Research Instrument

The instrument used for this research is a test. According to Arikunto (2018:47), a test is a tool for collecting information, but compared to other tools, tests are more formal because they are bound by predetermined limitations. The test conducted in this study is a speaking practice test. This test is used to measure students' speaking abilities in Japanese, with pre-tests and post-tests being utilized. The test method is implemented during the learning process when treatments are applied, with the pre-test and post-test scores taken at the beginning and end of the treatment in the classroom in the form of oral tests. The oral test material revolves around topics such as self-identity, family, and personal abilities.

1.6 Data Analysis Technique

To analyze statistical data in this study, a comparative study using the t-test technique was employed for two variables from a small, related sample (Sudijono, 2018:305). The t-test table is used to determine whether there is a significant difference between variable X (pre-test scores) and variable Y (post-test scores) in the experimental group. The steps for using the t-test technique are as follows:

- a. Determine the average or calculated mean of the difference between the score of variable X and the score of Variable Y using the formula:

$$M_D = \frac{\sum D}{N}$$

Details:

M_D : Average difference
 $\sum D$: Total score difference
 N : Total of variable

- b. Calculate the standard deviation of variables X and Y using the formula

$$SD_D = \sqrt{\frac{\sum D^2}{N} - \left(\frac{\sum D}{N}\right)^2}$$

Details:

SD_D : Standard deviation of the difference
 $\sum D$: Total Score difference
 $\sum D^2$: The square of total score difference
 N : Total of variable

- c. Calculate the standard deviation of variables X and Y using the formula

$$SEM_D = \frac{SD_D}{\sqrt{N-1}}$$

Details:

SEM_D : Standard error of difference
 SD_D : Standard deviation of the difference
 N : Total of variable

- d. Calculate the standard deviation of variables X and Y using the formula

$$t_0 = \frac{M_D - SD_D}{SEM_D}$$

Details:

t_0 : t-statistics
 SEM_D : Standard error of difference
 SD_D : Standard deviation of the difference
 M_D : Average difference

e. Test of Hypothesis

In this study, the hypothesis formula is stated as follows:

1. Formulating the Alternative Hypothesis (HA): there is a significant difference
2. Formulating the Null Hypothesis (H0): there is no significant difference between variable x and variable y.

The validity of these two hypotheses is tested by comparing the calculated t-value (t_0) with the critical t-value (t_t) after determining the degrees of freedom using the formula:

$$Df \text{ or } db = N - 1$$

Using this formula, the critical t-value (t_t) is obtained at a 5% significance level. If the calculated t-value (t_0) is less than or equal to the critical t-value ($t_0 \leq t_t$), then H0 is accepted and HA is rejected, meaning there is no significant effect between variable x and variable y. Conversely, if the calculated t-value (t_0) is greater than the critical t-value ($t_0 \geq t_t$), then H0 is rejected and HA is accepted, indicating there is a significant difference between variable x and variable y.

RESULT AND ANALYSIS

2.1 Description of Research Sample

The sampling was conducted at SMAN 21 Jakarta (Senior High School 21 Jakarta). The sample in this study consisted of six students from grades 10 to 12 who participated in the Japanese Club extracurricular activities.

The sample was determined based on recommendations from the Japanese language teacher and the purpose of evaluating the effectiveness of the Scientific Learning approach and the Suggestopedia method in the Japanese Club extracurricular activities. This evaluation is highly beneficial for both teaching and learning activities for teachers and students.

2.2 Description of Experimental Research

To address the research question regarding the application of the Scientific Learning approach and the Suggestopedia method in the Japanese Club extracurricular activities, the researcher explains it in the study description. In this study, the researcher provided treatment to the students by applying the Scientific Learning approach and the Suggestopedia method over two sessions. The first session included administering a pre-test to the students before the learning activity, and the second session involved a post-test after the learning activity, with each session lasting 60 minutes. Before the learning sessions began, the researcher collected data on students' speaking abilities by conducting a direct pre-test on October 31, 2024, just before the first session. The learning sessions took place from October 31, 2024, to November 8, 2024, during which the researcher administered the post-test to the students directly.

- 2.2.1 Phase 1: Identifying Learning Needs and Objectives In this phase, the teacher designs instructional materials based on the lesson plan, utilizing websites and PowerPoint presentations to apply the Scientific Learning approach and the Suggestopedia method from October 31, 2024, to November 8, 2024. The teacher packages the content to align with the steps of Scientific Learning, using PowerPoint and illustrations to engage students in observing Japanese verb materials sourced from the website wkwk-japan.com, focusing on: KK + Masu / Masen / Mashita / Masendeshita. The lesson is designed according to the Suggestopedia method, incorporating group seating, soft background music, and a spin-wheel game.
- 2.2.2 Phase 2: Delivering Learning Concepts and the 5M Approach (Observing, Asking, Trying, Associating, and Communicating) On October 31, 2024, the teacher assessed students' basic speaking skills before applying the treatment. A pre-test was conducted using a Google Form to gauge students' understanding before introducing the Scientific Learning approach and the Suggestopedia method. Students were then seated close together and observed illustrations displayed in the PowerPoint presentation alongside materials from wkwk-japan.com: KK + Masu / Masen / Mashita / Masendeshita, with soft music playing in the background. The focus was on basic masu (ます) verbs in positive (masu, ます) and negative (masen, ません) forms. Students were encouraged to ask questions about the verbs they observed, engage in discussions, and attempt to construct sentences based on the examples and illustrations provided. The teacher guided students in associating or reasoning about the similarities and differences between Japanese and Indonesian verb sentences. Lastly, students took turns spinning the wheel of names to practice communicating and summarizing sentences they had learned. However, during the session, a student's phone ran out of battery, so the teacher had to lend their personal phone to continue the activity.
- 2.2.3 Phase 3: 5M Approach and Learning Content Evaluation On November 8, 2024, students once again sat close together and observed illustrations displayed in the PowerPoint presentation alongside materials from wkwk-japan.com: KK + Masu / Masen / Mashita / Masendeshita, with soft music playing. This session focused on past tense verbs (mashita, ました) in positive (mashita, ました) and negative (masendeshita, ませんでした) forms. Students were encouraged to ask questions, discuss, and attempt sentence construction based on examples and illustrations provided. The teacher facilitated the students in reasoning about similarities and differences in verb sentences between Japanese and Indonesian. For the final activity, students played *shiritori*, with the losing student tasked with practicing communication and summarizing the verb sentences they had learned. Afterward, a post-test was administered via Google Form to assess the students' understanding following the implementation of the Scientific Learning approach and Suggestopedia method. The session concluded with a note of gratitude and a survey distributed to gather students' feedback on the learning experience using these methods.

2.3 Description of Pre-test and Post-test Results

The pre-test was conducted during the first session on October 31, 2024, involving six students from SMAN 21 Jakarta who participated in the Japanese Club extracurricular activities. The purpose of the pre-test was to assess the students' level of understanding of the material. It was administered via Google Forms, containing questions and instructions aligned with the lesson plan based on the Scientific Learning approach and the Suggestopedia method.

The post-test was conducted during the second session on November 8, 2024, with the same six students, following the treatment using the Scientific Learning approach and Suggestopedia method. The objective of the post-test was to measure the extent of improvement in the students' understanding compared to their performance in the pre-test. Like the pre-test, the post-test was also administered via Google Forms and included questions and instructions aligned with the lesson plan.

Below are the steps for calculating the results:

1. Calculating the difference for each data pair. To determine this is by first calculating the difference (D) between each post-test and pre-test.

Table 1. Pre-test and Post-test results.

Number.	Name	Pre-test (y)	Post-test (x)	$D = (x - y)$	$D^2 = (x - y)^2$
1	Jasmine	63	100	37	1369
2	Sheila	21	35	14	196
3	Meutia	49	66	17	289
4	Karindra	42	66	24	576
5	Chiara	35	72	37	1369
6	Aubrina	28	70	42	1764
$N = 6$				$\Sigma = 171$	$\Sigma = 5563$

Details:

x : Post-test score

y : Pre-test score

SEM_D : Standard error of difference

D : Difference

D^2 : The square of difference

Σ : Total

N : Total of variable

- Finding the calculated mean of the differences between the scores of variable X and variable Y using the formula:

$$\bar{D} = \frac{\Sigma D}{n} = \frac{24+37+42+37+14+17}{6} = \frac{171}{6} = 28.5$$

- Calculate the standard deviation of variables X and Y using the formula:

$$S_D = \sqrt{\frac{689.5}{6-1}} = \sqrt{\frac{689.5}{5}} = \sqrt{137.9} \approx 11.74$$

- Calculate the t-statistics using the formula:

$$\frac{SD}{\sqrt{n}} = \frac{11.74}{\sqrt{6}} = \frac{11.74}{2.45} \approx 4.79$$

$$t = \frac{28.5}{4.79} \approx 5.94$$

- Defining the t-table using the formula:

$$df \text{ atau } db = n - 1$$

$$df \text{ atau } db = 24 - 1 = 23$$

It was found that the t-test value is 5.94, with a significance level of 0.05 and degrees of freedom (df) = 5, yielding a t-table value of 2.57. Therefore, there is an effectiveness of the Scientific Learning approach combined with Suggestopedia in teaching verbs in the Japanese Club extracurricular activities at SMAN 21 Jakarta.

CONCLUSION

Based on the implementation of the Scientific Learning approach and the Suggestopedia method in teaching verbs to students at SMAN 21 Jakarta, the initial step is to design instructional materials aligned with the lesson plan. This involves utilizing a website and PowerPoint, incorporating the Scientific Learning approach and the Suggestopedia method. Next, the teacher assesses the students' level of understanding before applying the treatment by administering a pre-test via Google Forms. During the face-to-face sessions, students sit close together and observe illustrations displayed while soft music plays to create a comfortable atmosphere. Students are given the opportunity to ask questions about the verbs they have observed, engage in discussions, attempt to form sentences, and associate similarities or differences in verb sentences between Japanese and Indonesian. Finally, students take turns playing a game to practice communicating and summarizing the verb sentences they have learned. This process continues until the final face-to-face meeting and the achievement of all learning objectives. In the final stage of the study, the teacher administers a post-test via Google Forms, completed individually by the students, to determine the improvement in their understanding compared to the initial assessment.

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