

## The impact of self-assessment-based learning modules on academic achievement of Hindu religious education students in Sangiang language courses

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**Abstract:** Teaching materials play an important role in improving the quality of learning and student learning outcomes. Therefore, this study aims to evaluate a self-assessment-based learning module developed for the Sangiang language course for students majoring in Hindu religious education. Specifically, this study aims to identify the effect of the module on student learning achievement in the Sangiang language course. This study used an experimental approach with a post-test-only control group design. Two classes were used as samples in this study, and they were selected using statistical matching. One class became the experimental class, and the other became the control class. Data were collected using multiple-choice tests, which have proven valid and reliable. The test was distributed to the experimental and control classes after the module was implemented in 8 meetings in the experimental class and after the control class was taught using conventional materials. The collected data were analyzed quantitatively using descriptive and inferential statistics. From the results of descriptive statistics, it was found that there were differences in learning outcomes between the experimental and control groups, where the experimental class obtained higher learning outcomes. However, because the data were not normally distributed, inferential statistical analysis, which was used to identify that the differences in learning outcomes of the experimental class and the control class were significant, was carried out using Mann-Whitney. From the analysis carried out, it was found that the differences between the control class and the experimental class were proven to be significant. Thus, it can be concluded that the developed module has proven to significantly influence student learning achievement in the Sangiang Language course.

**Keywords:** Local language, Module, Sangiang language, Self-assessment.

### 1. Introduction

The Sangiang language plays a very important role in the life of the Hindu Kaharingan community in Central Kalimantan. This language is used to communicate in various religious ritual ceremonies to interact with God Almighty and his manifestations (Sashita & Arimi, 2024; Sugiyarto, 2016). As a realistic product of the ancestors of the Dayak Kaharingan community, the Sangiang language reflects unique linguistic and cultural phenomena. It represents the community's life that supports its sustainability (Riwut, 2003). Until now, the Sangiang language remains an integral part of the ritual ceremonies of the Dayak community, especially the Hindu Kaharingan community (Supriadi et al., 2020). However, the use of the Sangiang language among the younger generation has decreased. Riwut (2003) noted that this language is a sacred (ancient) language only used in ritual ceremonies, so it is rarely known and used by the younger generation. This phenomenon indicates a serious threat to the sustainability of the Sangiang language. This language has a significant magical-religious role in the culture of the Dayak Kaharingan community (Fatmawati & Andayani, 2019).

To preserve the Sangiang language, learning this language has been taught at the STAH Tampungpenyang Campus. However, the learning process faces various obstacles, especially in the

availability of quality teaching materials. Adequate teaching materials are very important to support the teaching and learning process. One of the effective learning media is a teaching module. Both teachers and students can use modules to improve their competence independently or in a structured manner (Mulyati & Sukirlan, 2018; Nurhafidhah et al., 2024). Well-designed modules can provide great benefits, such as increasing student learning interest, supporting an efficient learning process, and helping students understand concepts independently (Herawati & Muhtadi, 2018).

However, learning the Sangiang language is still conventionally carried out. The material taught by lecturers is not uniform, the learning tools used are not standard, and the evaluation of student abilities is carried out with different approaches. As a result, Sangiang language learning outcomes are uneven among students (Supriadi et al., 2020). In addition, there are no adequate teaching modules for independent learning or those that can systematically measure students' abilities.

Realizing this problem, researchers have developed a Sangiang language learning module based on self-assessment. The self-assessment-based module allows students to evaluate their abilities, understand their development, and take appropriate steps to improve their understanding of the Sangiang language (Herawati & Muhtadi, 2018). This module also includes recordings of Sangiang pronunciation from religious leaders, helping students improve their speaking skills with correct pronunciation. The development of this module aims to overcome obstacles in learning the Sangiang language, improve students' understanding of this language, and preserve its use in community life. This module is expected to improve students' language skills, especially listening, speaking, reading, and writing. In addition, this module is also expected to be a standard reference for lecturers in charge of Sangiang language courses so that the learning process becomes more focused, effective, and efficient.

The self-assessment-based module allows students to learn anytime and anywhere, according to their needs. This allows for more flexible, structured, and enjoyable learning, ultimately stimulating lifelong learning (Duffy & Holmboe, 2006; Yan & Carless, 2022). Therefore, to ensure that the developed module can help students learn the Sangiang language, this study aims to evaluate the effectiveness of the Sangiang language module developed in improving students' understanding and skills in Sangiang language as seen from students' learning achievements in the Sangiang language course.

## 2. Method

Following the purpose of this study, namely evaluating the effectiveness of the Sangiang language module developed in terms of student learning achievement in the Sangiang language course, this study was conducted using a quasi-experimental research method. This experimental method involves experimental and control groups, but the study samples were taken from two intact groups (Fraenkel et al., 2014). The research design used in this study was a post-test-only control group design. Thus, this study involved two groups of students selected using statistical matching techniques, namely sampling techniques that utilize statistical tests to ensure that the two groups do not have different academic abilities (Fraenkel & Wallen, 2014). One group was used as the experimental group, and the other group was used as the control group. The experimental group consisted of 25 students, and the control group consisted of 27 students. The experimental group was taught using the Sangiang language module developed, while the control group was taught with conventional teaching materials commonly used by lecturers. After eight meetings, both groups were given a post-test to determine their learning achievement for the Sangiang language course. Before being used, the post-test had been tested to ensure its validity and reliability. The post-test results from the two groups were then analyzed using descriptive statistics to compare the general tendencies of the data from the two groups. Next, the researcher conducted a prerequisite test to conduct an independent t-test using a normality and homogeneity test. Furthermore, the researcher analyzed the data using the Mann-Whitney U non-parametric inferential test because the data was proven not normally distributed (Pallant, 2011). The results of the data analysis can be seen in the findings section.

### 3. Findings

Following the purpose of the study, namely to evaluate the effectiveness of the Sangiang language module based on self-assessment developed from the learning achievement of students in the Sangiang Language course, this section will explain the results of data analysis from the post-test of the experimental group and the control group. The results of the analysis will be explained starting from the results of descriptive statistical analysis, prerequisite tests, and inferential tests. The following is an explanation of each of the results of the analysis.

#### 3.1. Descriptive Statistics Results

After the post-test was declared valid and reliable, the post-test was given to the experimental and control classes, when the control class had been taught using the developed product for 8 meetings and the control class was taught 8 times using previously available materials. The post-test results from the experimental and control classes were then analyzed using descriptive statistics. From the results of the descriptive analysis conducted, it was found that there were differences in student learning outcomes in the experimental and control classes. The learning outcomes of the experimental class were higher than those of the control class, which can be seen from the average, maximum, and maximum values of the two groups, as seen in Table 1.

**Table 1.**  
Descriptive statistics results.

	<b>N</b>	<b>Range</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. deviation</b>	<b>Variance</b>
Experiment	25	7.00	93.00	100.00	97.6800	2.51197	6.310
Control	27	24.00	73.00	97.00	88.0370	4.83164	23.345

#### 3.2. Prerequisite Test

Although the descriptive statistical results show differences in the learning outcomes of the experimental group and the control group, to prove whether the differences in learning outcomes are significant, the analysis is continued using inferential statistical analysis. The planned test used is the independent t-test. Thus, the researcher conducted a prerequisite test first. The researcher conducted a normality test, but the results showed that the data from the experimental and control classes were not normally distributed, as shown in Table 2 below. The results of the normality test using Shapiro-Wilk showed that the Sig. value  $> 0.05$ , so it can be concluded that the data is not normal.

**Table 2.**  
Normality test results.

<b>Group</b>	<b>Shapiro-wilk</b>		
	<b>Statistic</b>	<b>Df</b>	<b>Sig.</b>
Experiment	0.773	25	0.000
Control	0.932	25	0.098

#### 3.3. Inferential Statistics Test

Considering that the data is not normally distributed, the parametric statistical test of the independent t-test cannot be performed. This makes the researcher analyze the data using non-parametric statistical analysis, Mann Whitney, the equivalent of the independent t-test, to conduct inferential statistical analysis and draw conclusions. From the results of the analysis, it was found that the difference in learning outcomes between the experimental class and the control class was significant. This can be seen from the Sig. value which is  $< 0.05$  (see Table 3). In other words, the product developed has proven effective in improving student learning achievement in the Sangiang language course.

**Table 3.**  
Inferential test results.

Statistics	Students' achievement
Mann-whitney U	19.000
Wilcoxon W	397.000
Z	-5.928
Asymp. Sig. (2-tailed)	0.000

#### 4. Discussion

The results of this study indicate that the self-assessment-based Sangiang Language module developed significantly improves student learning achievement compared to conventional teaching materials. The descriptive analysis shows that the average post-test score of the experimental group (97.68) is higher than that of the control group (88.03). In addition, the maximum score in the experimental group reached 100, while in the control group, it only reached 97. The smaller standard deviation in the experimental group (2.51) compared to the control group (4.83) indicates that the variation in scores in the experimental group is lower, reflecting that learning using self-assessment-based modules can provide more consistent results.

These findings align with previous studies showing that self-assessment and modules can significantly improve cognitive engagement and student learning outcomes (Andrade, 2019; Atrash et al., 2023; Yan et al., 2023). This is because such modules allow students to evaluate and reflect on their abilities, strengthening their conceptual understanding and critical thinking skills (Brookhart, 2017). Both modules and self-assessments help students to be independent learners (Puspitowati et al., 2022; Ratminingsih et al., 2018; Sidiq et al., 2021). Self-assessment can help students become autonomous learners (Gholami, 2016).

The non-parametric Mann-Whitney U test results showed that the difference between the experimental and control groups was statistically significant with a Sig. value of 0.000. This confirms the effectiveness of the self-assessment-based module in improving learning achievement. This module provides relevant and in-depth exercises, allowing students to practice listening, speaking, reading, and writing in Sangiang in a more focused manner. These findings are consistent with research showing that self-assessment can improve students' metacognition and responsibility for learning (Panadero et al., 2016; Savira & Laksmiwati, 2017; Siegesmund, 2017). Learning environments that support self-reflection have also been shown to improve intrinsic motivation and learning outcomes, particularly in language learning (Dörnyei, 2020; Sharma et al., 2016; Widiartini et al., 2023).

These findings have important implications for teaching the Sangiang language, particularly in the context of higher education. With the decreasing number of young people who master the Sangiang language, self-assessment-based modules provide a practical solution to preserve the language. This module improves learning achievement and allows students to better understand and master a language that has high sacred and cultural value for the Dayak Kaharingan community.

#### 5. Conclusion

This study concludes that the Sangiang Language module based on self-assessment is proven to be effective in improving student learning achievement compared to conventional learning methods. The analysis results showed significant differences between the experimental and control groups, which supports the module's success in integrating the process of self-reflection and competency-based assessment into learning. However, this study has several limitations that need to be considered. First, the study was only conducted at one higher education institution, so the results cannot be generalized to a wider context. Second, this study focuses more on the cognitive aspects of students, so the affective and psychomotor aspects have not been explored in depth. In addition, reliance on self-assessment can potentially cause bias if students are not honest or do not understand the process of self-reflection. Based on these findings and limitations, future research is expected to be conducted in the form of longitudinal research to evaluate the impact of the module on student learning and the preservation of the Sangiang Language in the long term.

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