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The Effect of the Use of Pegon Gorontalo Arabic Text on the Reading Ability of MTs Al Islam Telaga Biru Students

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ABSTRACT

The background of this research lies in the need to design Arabic reading instruction at madrasah tsanawiyah (MTs) that is linguistically sound yet rooted in local cultural–orthographic traditions such as Arab Pegon Gorontalo. The purpose of this study is to examine the effect of using Arab Pegon Gorontalo texts on students' Arabic reading ability at MTs Al Islam Telaga Biru. This quantitative research employs a pretest–posttest control group design involving a population of 120 students, from which 60 students were selected as samples and divided equally into experimental and control groups. The experimental group received instruction using Arab Pegon Gorontalo texts, while the control group used standard Arabic texts currently adopted in the curriculum. Reading tests were developed to measure fluency, literal and contextual comprehension, and understanding of key vocabulary, and were validated through expert judgment and reliability analysis. Data were analyzed using descriptive statistics, normality and homogeneity tests, paired-samples t-tests to measure within-group gains, independent-samples t-tests to compare post-test scores, and Cohen's d to estimate effect size. The principal results show that the experimental group experienced a much larger and statistically significant improvement than the control group ($p < 0.05$) with a very large effect size ($d = 10.51$). The major conclusion is that Arab Pegon Gorontalo texts are highly effective in enhancing students' mahārah al-qirā'ah compared to conventional instruction. This study contributes to the field by providing empirical evidence for integrating locally grounded Pegon orthography within contextual Arabic reading instruction and curriculum development at MTs.



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Introduction

Arabic learning at MTs occupies a fundamental position because it functions to build basic competencies in understanding religious texts such as the Qur'an, hadith, fiqh, and other Islamic literature. Within the framework of the contemporary curriculum, learning Arabic is required not only to develop linguistic competence, but also the ability to understand texts contextually, as shown in a comparative study of the curriculum that emphasizes flexible teaching strategies and skill-based assessments for more holistic evaluation.[1] The strengthening of learning relevance is also strengthened by the literature on Pegon Arabic literacy as a cultural heritage that facilitates access to Islamic scientific traditions in the archipelago (Ulyan et

al., 2020), as well as a sociolinguistic study of Gorontalo that highlights the dynamics of mixed codes and language characters in the Gorontalo Arab Village community. [2], [3]

Mahārah al-qirā'ah occupies a core position as a basic skill that determines students' ability to understand sacred texts and Islamic literature more deeply. Qir learningā'AH is not just a technical reading activity, but an entrance to understand the theological, historical, and cultural context of religious texts. Therefore, the process of increasing Qā'ah literacy must be supported by materials that allow students to connect the text with the realities of the local culture, including the use of the Pegon script as a relevant approach in the context of the archipelago. [4] This emphasis is in line with research findings that affirm the importance of reading classical texts and turats texts to strengthen students' reading skills and critical thinking skills. [5][6]

In practice, many MTs students still face challenges in understanding Arabic sentence structure, vocabulary, and the contextual meaning of the text read. This challenge is exacerbated by the use of standard texts that do not make room for the cultural context of students, so teachers need to develop strategies that not only emphasize linguistic aspects but also contextual meanings that are close to the learner's experience. [7] In line with that, various studies of Arabic learning innovations emphasize the importance of creative and contextual approaches, including the use of local culture-based media and educational technology support. [8], [9] Reading training programs and text encoding techniques, such as crossword puzzles, have also been shown to assist students in overcoming Pegon reading difficulties (Hadi et al., 2022), while Pegon literacy training for ancient manuscripts shows its contribution in unlocking access to Turati literature. [5][10]

Pegon Arabic, as a local Islamic literacy media, has proven to play an important role in various regions of the archipelago, because of its writing form that combines Arabic letters with local phonology, so that it makes it easier for students to read and understand religious texts. [4] In the context of Gorontalo, the Arabic adaptation of Pegon shows its relevance through its conformity with regional phonology, which helps students make the transition from local languages to Arabic-language texts, both in formal learning in MTs and in religious communities. [3], [11] The use of Pegon is also strengthened by research that highlights its role in the transmission of Islamic sciences in Islamic boarding schools and student communities, so that it has the potential to be integrated into the Arabic curriculum at MTs to enrich the variety of texts used in learning. [12] In addition, the use of digital media for Pegon learning provides more interesting and contextual learning opportunities, in line with the technology-based Arab-Pegon literacy trend. [8], [13] The CTL approach that emphasizes the relevance of the local context further strengthens the use of Pegon Gorontalo as a means of learning that increases students' motivation and meaning of learning. [14], [15]

An experimental quantitative study that specifically assessed the effectiveness of Arabic Pegon Gorontalo in improving mahDüsseldorf Al-Qirā'AH has not been seen in the available empirical literature, so the need for experimental studies becomes very relevant to understand its impact measurably. [2]–[5], [9], [15] In general, the study of Pegon still focuses on historical, philological, and cultural aspects, and has not touched the pedagogical realm that can show its influence on the systematic improvement of MTs students' reading skills. [2], [4], [12] In addition, until now, there is no empirical data that specifically shows how the adaptation of Gorontalo phonology affects the level of readability of texts for MTs students, because the existing literature discusses more scientific transmission, socio-linguistic dynamics, and cultural context than measurable evaluation of readability. [3], [4], [11] Research on the use of Pegon in the context of modern learning in MTs is also relatively minimal, especially in evaluating the integration of local culture-based media or technology as part of the Arabic curriculum, including how it impacts qir learning outcomesā'ah. [7], [8], [16]

These quotes show that the existing research framework has not provided much quantitative insight that proves the effectiveness of Pegon Gorontalo in qir learningā'ah. This condition shows that there are significant gaps to be filled through the design of experiments that are systematic, structured, and sensitive to the local cultural context. [1], [2][3], [8], [16] The lack of explicit pedagogical research on Pegon Gorontalo shows that local cultural values have not been fully utilized as a force in the design of Arabic language learning. Thus, empirical testing is needed to assess the effectiveness of Pegon Gorontalo objectively, thus providing a strong academic basis for its integration into the Arabic language learning curriculum at MTs. [17]

The first gap is the need to test the effectiveness of local wisdom-based media measurably in qir learningā'ah. Current literature does highlight the potential of digital media and local culture. However, there is still a lack of experimental evidence that assesses its impact concretely on the Arabic reading skills of Pegon Gorontalo. [8][18] The second gap is related to the lack of systematic integration of Gorontalo Pegon into the qir learning designā'ah in MTs formally, even though the sociolinguistic study of Gorontalo shows the potential of local phonology and mixed-code dynamics that are relevant for Arabic language learning in the community. The third gap is the gap between the use of standard texts and students' need for culturally relevant teaching materials; Pegon offers a bridge between Arabic texts and the Islamic traditions of the archipelago, but its

integration into learning materials is still minimal.[12][2] The fourth theoretical gap is the absence of a qirā'ah learning model that explicitly combines Pegon Gorontalo with a Contextual Teaching and Learning (CTL) approach, even though CTL has been shown to increase students' relevance and learning motivation through the integration of local cultures.[1], [8], [16] These four gap areas are the basis for the urgency of research to provide an empirical and theoretical foundation in the use of Pegon Gorontalo in Arabic language learning in MTs.

This research offers novelty by utilizing the Arabic text of Pegon Gorontalo as an experimental medium in qir learningā'ah, so that it can directly test how regional phonology adaptation affects the readability and comprehension of religious texts in the MTs environment. In addition, this study combines the components of Arabic language learning with local cultural literacy, placing regional phonology adaptation as an important element in increasing students' access to Islamic literature in the archipelago through Pegon Gorontalo.[12] This research also has the potential to be one of the initial studies that explicitly assesses the pedagogical impact of Pegon Gorontalo in MTs, thereby making a new contribution to the development of regional-based Islamic literacy in the archipelago and the renewal of the Arabic language curriculum.[19] Thus, the novelty of this research lies in the use of Pegon Gorontalo as an experimental medium, the combination of Arabic language learning with local literacy, and the contribution to the pedagogical understanding of the Pegon script in the context of formal education.[12], [15]

In the framework of C-C-T-E, the Contradiction arises from the assumption that qirā'ah learning must use standard Arabic text. This study challenges this assumption by examining the possibility that Pegon Gorontalo is actually more effective in improving student readability. On the dimensions Creative, this research develops an innovative approach by adapting Pegon Gorontalo into formal learning and utilizing local culture-based media to improve student understanding.[5] From the side Trend, this research is in line with the global trend of learning based on local cultural context and regional literacy, as well as the integration of technology and culture in Arabic language teaching. Meanwhile, the Emergency is based on low-quality abilityā'ah MTs students and the urgent need to provide learning media innovations that are more relevant to the local culture of Gorontalo.[7]

This research is here to fill the research gap by providing the empirical evidence needed for the development of an Arabic curriculum based on Pegon Gorontalo, so that it can enrich the design of qir learningā'ah that is responsive to the local cultural context. The integration of Pegon Gorontalo-based learning is expected not only to improve qirā'ah skills of students, but also contribute to the preservation of the Islamic scientific heritage of the archipelago through the use of local scripts. Thus, this research can strengthen the relevance of Arabic language learning in MTs and ensure the sustainability of Islamic cultural literacy in the school environment and the surrounding community.[2], [3]

Theoretically, it is important to develop a qirā'ah learning model based on local culture that combines Pegon Gorontalo with the Contextual Teaching and Learning (CTL) approach, so that the material of reading religious texts is not only understood textually but is associated with the context of local culture and language. Previous research has shown that Pegon is rich in the cultural value of the archipelago and has long been used as a tool for Islamic literacy in various regions, but systematic pedagogical studies on its effectiveness in the context of formal learning are still lacking, so empirical verification of its role in improving education is needed. ḥAl-Qirā'arahPractically, this study is relevant because it can help teachers find contextual learning media that can improve students' motivation, readability, and comprehension, in line with research that highlights the potential of contextual and digital media in Arabic language learning and modern Islamic literacy.[20], [21] In addition, the development of media based on local wisdom has the potential to strengthen the Islamic literacy of the archipelago and maintain cultural preservation through Pegon Gorontalo as an important linguistic asset in the context of Gorontalo. This theoretical framework is also in line with the trend of educational research that emphasizes the use of digital media and local culture to increase student engagement in learning and learning. Düsseldorf Al-Qirā'ah.[22], [23]

This study aims to examine the influence of the use of the Gorontalo Pegon Arabic text on the reading ability of MTs Al Islam Telaga Biru students by comparing two groups, namely the experimental group that learned using the Gorontalo Pegon text and the control group that used the standard text. The aim of this study is in line with the literature showing that the adoption of local phonological texts can affect the readability and comprehension of religious texts in specific cultural contexts. In addition, this study intends to measure differences in improved reading ability between the experimental and control groups to assess whether local phonological adaptation via Pegon resulted in a significant increase in readability compared to standard texts. [6], [24], [25]Operationally, the evaluation of students' reading ability also includes understanding the contextual

meaning of religious texts, as well as the ability to interpret key vocabulary, as emphasized in the evaluative literature on Arabic language learning. [6], [26]

The main hypotheses of this study are as follows: H1: There is a significant influence of the use of the Arabic text of Pegon Gorontalo on mahDüsseldorf Al-Qirā'ah students MTs. H0: There is no significant effect of the use of the Arabic text of Pegon Gorontalo on mahDüsseldorf Al-Qirā'Ah students. Optionally, the directional hypothesis can be stated that the experimental group using Gorontalo Pegon will show an increase in mahDüsseldorf Al-Qirā'ah higher ah than the control group that used standard text. This emphasis on experimental testing is in line with the literature that underscores the need for pedagogical verification of Pegon as a learning medium, as well as the importance of quantitative evaluation of Arabic learning outcomes. [27]

This research explicitly affirms its contribution in filling the research gap by providing empirical evidence on the effectiveness of the use of the Gorontalo Pegon text as a qir learning mediumā'ah in MTs, as suggested by the gaps identified in various studies on the direction of Pegon pedagogy and the context of modern learning. The results of this study are expected to strengthen the design of qirā'ah learning based on Pegon Gorontalo, support the development of an Arabic language curriculum that is more relevant to the cultural context of Gorontalo, and enrich the Islamic literacy of the archipelago through the use of contextual media and learning technology that suits the needs of MTs students. [20]–[22]

Method

This study uses a quantitative approach with a *pretest–posttest control group design* to test the influence of the use of Gorontalo Pegon Arabic text on students' reading ability. This design involved two groups, namely the experimental group that received treatment in the form of learning using the Arabic text of Pegon Gorontalo and the control group that learned using standard Arabic text. The selection of this design was carried out to ensure that there is a measurable and objective comparison of reading ability improvement between the two groups. The experimental approach was chosen because it was able to provide strong empirical evidence on the effectiveness of Pegon-based learning interventions in the context of MTs.

The research was carried out at MTs Al Islam Telaga Biru, an Islamic educational institution that represents the Arabic language learning context at the MTs level in Gorontalo. The time of the research is adjusted to the academic calendar of the current semester, so that interventions can be applied in natural learning conditions without disrupting the regular learning schedule. The study population was 120 students, consisting of several classes at the MTs level, with sample selection using *purposive sampling* techniques to obtain an equivalent group in basic Arabic language skills. The research sample totaled 60 students, who were then divided into two groups proportionally, consisting of 30 students each as the experimental group and the control group.

The research instrument is in the form of a reading ability test, which has been prepared based on reading skill indicators, which include reading fluency, understanding literal meaning, understanding contextual meaning, ability to identify key vocabulary, and ability to interpret text content. This instrument is validated through *expert judgment* by Arabic lecturers and teachers, and its reliability is tested using Cronbach's Alpha coefficient to ensure internal consistency. The test material for the experimental group used the Gorontalo Pegon Arabic text that had been adjusted to the local phonology rules, while the control group used standard Arabic text according to the applicable textbook. The preparation of the instrument takes into account the equality of difficulty levels so that the results of the comparison of the two groups are fair and valid.

The research procedure began with the administration of a *pre-test* to both groups to measure the students' initial reading ability before the treatment was given. The experimental group then followed learning using the Gorontalo Pegon Arabic text through a series of sessions designed to train readability and comprehension of the Pegon text, while the control group followed conventional learning using standard Arabic text. After the intervention was completed, both groups were given a *post-test* to measure changes in reading ability after treatment. Data were analyzed using normality and homogeneity tests as a prerequisite for analysis, followed by *paired sample t-tests* to see improvements in each group, and *independent sample t-tests* to determine significant differences between the two groups. In addition, *the effect size* (Cohen's d) was calculated to determine the influence of Arabic-based learning in Pegon Gorontalo on students' mahārah al-qirā'ah.

Results and Discussions

Results

The data analysis in this study began with the presentation of descriptive statistics to describe the initial and final ability profiles of students in both groups, namely the experimental group that learned using the Gorontalo Pegon Arabic text and the control group that used standard Arabic text. The presentation of

descriptive statistics aims to provide an overview of the distribution of values, averages, and data characteristics before inferential testing is carried out. Descriptive data includes minimum, maximum, mean, and standard deviation values in pre-test and post-test results. This description is important to see the pattern of changes in students' reading ability at the beginning, as well as the first step to compare the effectiveness of treatment in the two groups. Thus, descriptive statistics serve as a basis for understanding the trend of data before normality, homogeneity, and t-test tests are carried out.

Table 1. Descriptive Statistics of Experimental Group

Statistics	Pre-Test	Post-Test
N	30	30
Mean	60.10	84.70
Std. Dev	2.16	2.53
Minimum	57	80
Maximum	64	88

The descriptive results showed a very significant increase in the experimental group. The average pre-test score of 60.10 indicates that students' initial reading ability is still in the sufficient category, with relatively homogeneous variation in scores. After participating in the Arabic text-based learning of Pegon Gorontalo, the average score increased to 84.70, showing a surge in improvement of 24.60 points. This increase was not only nominally large, but also even because the standard deviation in the post-test remained within a small range, indicating the consistency of the increase in almost all participants. These findings provide an early indication that the use of Gorontalo Pegon has a strong pedagogical impact in improving students' reading skills, which are then further tested through inferential analysis.

Furthermore, a descriptive analysis was performed on the control group that received learning using standard Arabic texts. The purpose of this analysis was to see the extent to which the improvement in reading ability occurred in conventional learning without the use of Pegon, so that it could be an objective comparison of the results in the experimental group. The presentation of data in the form of averages, score distributions, and standard deviations provided a basic overview of the conditions of learning outcomes in the control group.

Table 2. Descriptive Statistics of the Control Group

Statistics	Pre-Test	Post-Test
N	30	30
Mean	58.90	71.40
Std. Dev	1.44	1.57
Minimum	57	68
Maximum	61	73

Furthermore, a descriptive analysis was performed on the control group that received learning using standard Arabic texts. The purpose of this analysis was to see the extent to which the improvement in reading ability occurred in conventional learning without the use of Pegon, so that it could be an objective comparison of the results in the experimental group. The presentation of data in the form of averages, score distributions, and standard deviations provided a basic overview of the conditions of learning outcomes in the control group.

Before conducting an inferential analysis using the t-test, the researcher first ensures that the data meet the basic assumption of parametric statistics, that is, the data must be normally distributed. The normality test is an important stage because the validity of the t-test, both the paired sample t-test and the independent sample t-test, is highly dependent on the fulfillment of this assumption. Therefore, the researchers used the Shapiro–Wilk Test, which is recommended for a sample of under 50 or 100 respondents. This test was carried out on the pre-test and post-test scores of each group, both the experimental group using the Pegon Gorontalo Arabic text and the control group using the standard Arabic text. The results of the normality test will determine whether the analysis process can be continued using parametric tests or requires an alternative approach.

Table 3. Normality Test (Shapiro–Wilk)

Group	Pre-Test	Post-Test
Experiment	0.247	0.311

Control	0.198	0.224
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The results of the Shapiro–Wilk normality test showed that all pre-test and post-test values in both groups had a significance value above 0.05. In the experimental group, the pre-test significance value was $p = 0.247$ and post-test $p = 0.311$, while in the control group, the pre-test significance value was $p = 0.198$ and post-test $p = 0.224$. Since all p-values are 0.05, it can be concluded that the data is normally distributed. Thus, the assumption of normality is met, so that this study can continue the analysis using the parametric paired sample t-test and independent sample t-test. These findings also indicate that the distribution of values in both groups does not show an extreme pattern of bias, and that the distribution of the data is in a reasonable condition for further testing.

After the data is declared to be normally distributed, the next stage is to test the assumption of homogeneity of variance between groups. This test was performed to ensure that the two groups, experimental and control, had a relatively similar level of variability before a comparative analysis was performed using an independent sample t-test. For this purpose, Levene's Test for Equality of Variances is used, which is available in SPSS. The homogeneity test is important because the results of the t-test can only be interpreted correctly if the variance of the two groups is homogeneous. If the significance value of the Levene's Test is greater than 0.05, then the data is declared homogeneous, and the analysis can be continued assuming equal variances.

Table 4. Homogeneity Test (Levene's Test)

Variable	Living Statistic	Sig.
Pre-Test	1.884	0.176
Post Test	2.091	0.154

The results of the homogeneity test showed that the significance value of Levene's Test for the pre-test score 361 was 0.176, while the significance value for the post-test 361 score was 0.154. Both values were greater than 0.05, so it can be concluded that the variance between the experimental group and 361 the control group was homogeneous in both the early and late stages of learning. With the homogeneity assumption fulfilled, the analysis can be continued using an independent sample t-test assuming the same variant. These findings also reinforce the validity of the comparison between the two groups, as the differences in scores found at a later stage were not caused by an imbalance of variance but by different learning treatments.

After confirming that the data in the experimental group were normally distributed and met the homogeneity assumption, the analysis was continued with a paired sample t-test to determine the effect of the use of Gorontalo Pegon Arabic text on the improvement of students' reading ability. This test is used because the pre-test and post-test come from the same group, so it can show the change in score that occurs due to direct treatment. This analysis is important to assess the effectiveness of Pegon Gorontalo-based learning interventions 361 tactically, not just descriptively.

Table 5. Paired Sample t-Test of Experimental Group

Statistics	Value
t	-34.214
Df	29
Sig. (2-tailed)	0.000

The results of the paired sample t-test showed a value of $t = -34.214$ with a significance value of $p = 0.000$ ($p < 0.05$). This shows that there is a very significant difference between pre-test and post-test scores in the experimental group. The average score increased from 60.10 to 84.70, resulting in an increase of 24.60 points. The very small p-value indicates that the increase did not occur by chance, but was a real impact of the use of the Pegon Gorontalo Arabic text. Thus, Pegon-based learning has proven to be effective in improving students' maharah al-qirā'ah.

Paired sample t-test analysis was also performed on a control group that learned using standard Arabic text. This test aims to find out the extent to which the improvement in reading ability occurs without Pegon Gorontalo-based interventions. By comparing the pre-test and post-test scores in the same group, this analysis provides an overview of the effectiveness of conventional learning and becomes the basis for comparison with the results of the experimental group.

Table 6. Paired Sample t-Test of Control Group

Statistics	Value
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t	-22.968
Df	29
Sig. (2-tailed)	0.000

The results of *the paired sample t-test* in the control group showed a value of $t = -22,968$ with a significance level of $p = 0.000$ ($p < 0.05$). These results confirm that there was a significant increase between pre-test and post-test scores, although the increase was not as large as in the experimental group. The average score increased from 58.90 to 71.10, or by 12.20 points. Although conventional learning still has a positive impact on reading ability, the effect produced is much lower than learning using the Arabic text of Pegon Gorontalo. This reinforces the conclusion that the Pegon treatment provides a greater pedagogical advantage in improving students' literacy heritage.

After knowing that each group experienced an increase in reading ability based on *the results of the paired sample t-test*, the next stage was to conduct *an independent sample t-test* to compare the results of the post-test of the two groups directly. This test aimed to find out whether the difference in reading ability improvement between the experimental group using the Gorontalo Pegon Arabic text and the control group using standard Arabic text was really statistically significant. This analysis is important because although both groups showed improvement, only comparative tests between groups can confirm the effectiveness of the treatment objectively. Assuming normality and homogeneity have been met, *the independent t-test* is carried out with *an equal variance assumed* approach as recommended by SPSS when the variance between groups is homogeneous.

Table 7. Independent Sample t-Test

Statistics	Value
t	22.837
Df	58
Sig. (2-tailed)	0.000
Mean Difference	13.60

The results of *the independent sample t-test* showed a value of $t = 22,837$ with a significance value of $p = 0.000$ ($p < 0.05$). This very small *p-value* indicates that there is a significant difference between the post-test values of the experimental group and the control group. The mean difference between the two groups reached 13.60 points, where the experimental group obtained an average of 84.70, while the control group obtained an average of 71.10. These results suggest that the improvement in reading ability in the experimental group was much greater than in the control group. Thus, it can be concluded that learning using the Arabic text of Pegon Gorontalo has a significant influence and is more effective than learning using standard Arabic text. This difference confirms that the adaptation of local phonology through Pegon is able to provide greater support for the readability and comprehension of students' religious texts.

To complete the results of the inferential analysis, the researcher calculated the effect size value using Cohen's formula d to find out how much the Pegon Gorontalo Arabic text-based learning affected the improvement of students' reading skills. The effect size calculation was carried out based on the average difference between the two groups post-test, which was then divided by the *pooled standard deviation*. This analysis is important because the significance value in the t-test alone is not yet able to describe the extent of the effect of the treatment, while the effect size provides an idea of the magnitude of the impact of the treatment on a practical and pedagogical scale.

$$d = \frac{(M_2 - M_1)}{SD_{\{pooled\}}}$$

$$d = \frac{(84.70 - 60.10)}{2.34} = 10.51$$

The results of the calculation show that Cohen's value $d = 10.51$, which far exceeds the limit of the "very large" category. Based on Cohen's interpretation, a value of 0.2 is categorized as small, 0.5 medium, 0.8 large,

and a value above 1.0 indicates a very strong effect. Thus, a score of 10.51 indicates that learning using the Arabic text of Pegon Gorontalo has an extraordinarily great influence on the improvement of the reading ability of MTs students.

The large value of the effect size indicates that the adaptation of local phonology through Pegon really simplifies the reading process, improves readability, and strengthens the understanding of the text for students. These findings confirm that the use of local culture-based learning media is not only contextually relevant but also pedagogically effective in improving mahārah al-qirā'ah. Thus, this very large effect size provides strong support for the integration of Pegon Gorontalo Arabic in the Arabic learning design in MTs, both as a media innovation and as a strategy to increase students' religious literacy.

Discussions

The results of the study showed that the use of Pegon Gorontalo Arabic text had a very significant influence on the reading ability of MTs students. This is evidenced by a very large increase in scores in the experimental group, from a pre-test mean of 60.10 to 84.70 in the post-test, with the results of a paired-sample t-test significant ($p = 0.000$). The magnitude of the increase is further reinforced by Cohen's effect size value of d of 10.51, which belongs to the "super large" category—far exceeding the strong influence standard in educational experimental research. These findings directly fill an empirical gap that has been the main problem: the absence of quantitative data that proves the effectiveness of the Pegon Gorontalo text in learning qirā'ah in MTs. So far, the literature on Pegon is more historical, philological, or cultural, without the support of measurable experimental research. Thus, this result is strong evidence that Pegon Gorontalo is not only culturally relevant but also pedagogically effective.

From a theoretical point of view, these findings confirm a key principle of Contextual Teaching and Learning (CTL), which emphasizes that learning will be more meaningful if the material is connected to the cultural context and linguistic experiences of the students. Pegon Gorontalo, which uses local phonology, allows students to read Arabic texts with sound representations that are closer to their everyday language, making the decoding process easier and faster. This is in line with the theory of cultural literacy, which states that access to texts increases when the representation of language and its symbols is close to the reader's cultural identity. Previous research on Pegon Nusantara also shows that Pegon functions as a bridge between Arabic and local languages, making it easier to access religious texts. Thus, a significant increase in the experimental group proves that the adaptation of local phonology in the form of Gorontalo Pegon has a strong theoretical basis and works effectively in learning practice.[28], [29]

If the results of this study are compared with previous studies, then these findings expand and strengthen the previous study. Studies on Pegon literacy show that students tend to understand texts written with a writing system that is close to the regional language. However, these studies did not test Pegon Gorontalo experimentally in the context of MTs. By providing evidence through a pre-test–post-test control group design, this study fills the methodological gap and presents empirical evidence that has never been shown before. Similarly, research on contextual learning shows that culturally relevant media and texts are able to increase motivation and reading comprehension. The findings of this study significantly reinforce this framework by showing a very significant improvement in learning outcomes when students are given texts that are appropriate to their phonology and culture.[30]

Practically, the results of this study answer the urgent need in the field, namely the need for qirā'ah learning media that is closer to the cultural reality of students. Empirical data showed that the experimental group improved much more than the control group (24.60 points vs 12.20 points), and the difference between the two groups at post-test was significant ($t = 22,837$; $p = 0.000$). This proves that Pegon Gorontalo can be used as an effective learning medium and can be applied by teachers to improve students' reading skills quickly. Thus, this research fills the pedagogical gap that has existed so far. There has been no systematic implementation of Pegon Gorontalo in the Arabic language learning curriculum at MTs, especially related to qirā'ah.

Overall, the results of this study consistently answer the empirical gaps, theoretical gaps, and pedagogical gaps identified in the introduction. This research shows that the Arabic text of Pegon Gorontalo not only has historical and cultural value, but also has proven to be effective in significantly improving the reading ability of MTs students. With very strong statistical evidence, this study confirms that the integration of Pegon Gorontalo in qirā'ah learning is a strategic step to develop students' religious literacy that is relevant to the local culture and in line with the principles of modern contextual learning.

Conclusions

This study has succeeded in answering the main problem raised, namely, whether the use of the Pegon Gorontalo Arabic text can improve the reading ability of MTs students. The results of statistical analysis showed

a very significant increase in the experimental group, both in terms of the difference in mean and *paired-sample t-test*, as well as the sharp difference between the experimental group and the control group in the test, the *independent t-test*. With a very large *effect size* value, this study provides strong empirical evidence that Pegon Gorontalo is able to substantially improve students' reading skills. Thus, this research has fully answered the empirical and pedagogical gaps that have not been previously filled in the literature.

These findings have important implications for the development of Arabic language learning in MTs in the future. The effectiveness of Pegon Gorontalo shows that learning media that are close to phonology and local culture is able to reduce linguistic barriers that often occur when students are faced with standard Arabic texts. The adaptation of local phonology in the Pegon system provides a bridge between students' basic reading skills and the higher demands of religious literacy. This strengthens the *Contextual Teaching and Learning* (CTL) framework, which emphasizes that learning will be more meaningful when it is related to the cultural experience and linguistic environment of students.

More broadly, these findings inform that Arabic language learning in madrasahs needs to move towards a more contextual, inclusive, and local culture-based model. Pegon Gorontalo not only functions as the archipelago's Islamic literacy heritage, but can also be an effective pedagogical instrument in increasing students' access to religious texts. Through the simplification of local phonology, students gain an easier reading experience, thereby increasing motivation, confidence, and engagement in the learning process. These findings suggest that a local culture-based approach is not merely a complement but a relevant strategy in modern Arabic language learning.

Based on these findings, this study recommends that Arabic teachers begin to integrate the Arabic text of Pegon Gorontalo into the learning of qirā'ah, especially at the initial learning stage. Madrasah can also develop modules and worksheets based on Gorontalo Pegon that are structured in a structured manner, so that they can be used continuously in the learning process. In addition, teacher training is needed to understand the principles of using Pegon Gorontalo, text adaptation techniques, and CTL-based classroom management so that its implementation is more optimal. This implementation is expected to be able to improve the quality of students' religious literacy and enrich the practice of Arabic pedagogy in madrasahs.

This research also opens up space for further research, especially to evaluate the effectiveness of Pegon Gorontalo on other Arabic language skills such as *istimā'*, *kalām*, and *kitābah*, as well as at different grade levels. The development of Pegon-based digital media is also a strategic opportunity to keep up with the development of learning technology. By strengthening the empirical and pedagogical foundations that have been built through this research, the use of Pegon Gorontalo has the potential to become a learning innovation that is sustainable, relevant, and contributes directly to strengthening Islamic literacy in the formal education environment.

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