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The Effectiveness of a Qiyasiyah Based Instructional Model on Nahwu Mastery: A Quasi Experimental Study among Madrasah Diniyyah Al Amiriyyah Students

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Abstract

Reliance on traditional rote learning methods hinders students' analytical reasoning skills in mastering Nahwu. Therefore, a systematic integration of the analogical approach (qiyas) and modern pedagogy is required to bridge the instructional gap that has, until now, been addressed in isolation. This study aims to test the effectiveness of the Qiyasiyah - Based Instructional Model, which combines analogical reasoning with active learning principles, This study aims to test the effectiveness of the Qiyasiyah Based Instructional Model in improving Nahwu mastery. Using a quasi-experimental design (pretest-post-test control group), the study involved 58 female students from Madrasah Diniyyah Al Amiriyyah who were divided into an experimental group (receiving Qiyasiyah Based Instructional Model) and a control group (conventional method). The data were analyzed using independent sample t-tests and effect size calculations (Cohen's d). The results showed a statistically significant improvement ($p < 0.001$) in the experimental group with a large effect size ($d = 1.58$), and more even achievement than in the control group. These findings indicate that the Qiyasiyah

Based Instructional Model is effective in improving students' understanding of Nahwu rules within the context of Madrasah Diniyyah Al Amiriyyah. The study concludes that the Qiyasiyah Based Instructional Model provides a structured, evidence - based pedagogical framework for improving Nahwu learning in the context of Madrasah Diniyyah Al Amiriyyah. The implications support the adoption of this model in the curriculum and teacher training, with recommendations for further research that expands the sample size and context of application.

Keywords: Arabic Language Education, Reasoning Nahwu Learning, Qiyasiyah-Based Instructional Model.

Introduction

Weak mastery of *Nahwu* is a persistent problem in Arabic language learning at Madrasah Diniyyah Al Amiriyyah, hindering students' communicative competence and their ability to understand authentic texts. In this specific learning context, students often perceive *Nahwu* as a difficult and irrelevant subject, which reduces their motivation and learning outcomes[1]. Evidence from the field shows that traditional approaches based on memorization *(tahfizhi)* and rigid rule transmission have been less optimal in improving students' grammatical understanding, creating a gap between grammatical theory and language practice[2]. As a result, students frequently struggle to achieve grammatical proficiency, particularly when required to analyze unfamiliar texts[3]. These difficulties, combined with declining motivation due to conventional teaching methods, call for an alternative instructional approach that is responsive to this local learning context[4]. Therefore, this study aims to address these pedagogical problems by developing and testing a more contextual teaching model at Madrasah Diniyyah Al Amiriyyah.

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[1] Nur Maya Badriyatul Jamroh and Indria Hikmatul Maula, "Pengaruh Metode Mubasyaroh Dalam Meningkatkan Maharah Kalam Pada Pembelajaran Bahasa Arab Di Kelas Progam Unggulan MTs Al-Amiriyyah Blokagung Banyuwangi," *TADRIS AL-ARABIYAT: Jurnal Kajian Ilmu Pendidikan Bahasa Arab* 2, no. 2 (2022): 285–99; Noza Aflisia et al., "Komparasi Pembelajaran Nahwu Di Pesantren Dan Madrasah," *Al-Fathin: Jurnal Bahasa Dan Sastra Arab* 5, no. 1 (June 29, 2022): 97–110, https://doi.org/10.32332/AL-FATHIN.V5I01.4231.

[2] Ilham Nur Kholiq and Moh Zulkifli Khabibullah, "Problematika Peserta Didik Dalam Proses Pembelajaran Bahasa Arab Di Madrasah Aliyah Darul Qur'an Glenmore Banyuwangi," *TADRIS AL-ARABIYAT: Jurnal Kajian Ilmu Pendidikan Bahasa Arab* 1, no. 02 (2021): 301–16.

[3] Ahmad Afandi et al., "Increased Understanding of Nahwu through Innovation in the Application of Direct Methods: Experimental Studies on Arabic Language Students," *Arabiyatuna: Jurnal Bahasa Arab* 8, no. 1 May (2024): 465–86.

[4] Rara Salvia Sari, Widiya Yul, and Riko Andrian, "Understanding Students' Perceptions of Arabic Learning Challenges: A Constructivist Study," *Mantiqu Tayr: Journal of Arabic Language* 5, no. 2 (2025): 233–53.

Previous literature has discussed the effectiveness of the *qiyasiyah* (analogy) approach in *Nahwu* learning, as well as the characteristics and learning needs of contemporary learners[5]. However, these studies have largely remained parallel, without systematically integrating *qiyasiyah* principles with a pedagogical framework into a measurable and empirically tested instructional model[6]. Specifically, research that designs, implements, and evaluates a model combining *Qiyasiyah* with active learning and higher-order thinking skills is still limited. To address this gap, the present study aims to develop and test such an integrated instructional model for *Nahwu* mastery.

The novelty of this research lies in the use of Q*iyasiyah* based instructional models in *Nahwu* learning to overcome obstacles and problems that arise in traditional based learning. Approaches that overemphasize rigid rules and rote memorization[7], without fostering analytical reasoning, are considered less effective for learners in the madrasah Diniyyah Al Amiriyyah context. The use of this *Qiyasiyah* based instructional model focuses on learners as subjects to encourage them to think critically[8] about their learning, especially when learning Arabic, thereby allowing them to understand and master *Nahwu* more easily.

This study generally aims to examine the effectiveness of implementing the *Qiyasiyah* Based Instructional Model in improving students' mastery of N*ahwu*, with a specific focus on the context of 21st-century learning. Specifically, these objectives are operationalized through two complementary, measurable research questions. This study aims to examine the statistical significance and effect size of the *Qiyasiyah* based instructional model intervention on improving students' mastery of *Nahwu* rules. The formulation of these multiple questions follows the principles of quasi-experimental design in language education research, which emphasize the importance of strong quantitative comparative evidence. Thus, the focus of this study goes beyond simply confirming the presence or absence of outcome differences, to providing a comprehensive analysis of the magnitude of the effect, generalizability, and the learning subjects' responses. This is expected to produce a complete and evidence-based evaluation map of the practical validity

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[5] Akmaliyah Akmaliyah et al., "Imitating Quranic Sentences as a Learning Strategy for Translating Arabic into Indonesian," *Indonesian Journal of Applied Linguistics* 13, no. 1 (2023): 217–28.

[6] Muhammad Firdaus et al., "Evaluation of the Arabic Language Learning Implementation and Challenges Faced in the Foreign Language Intensification Program (PIBA)," *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 1 (2025): 307–26.

[7] Ruşen Meylani, "A Comparative Analysis of Traditional and Modern Approaches to Assessment and Evaluation in Education," *Batı Anadolu Eğitim Bilimleri Dergisi* 15, no. 1 (2024): 520–55.

[8] Lauren Bellaera et al., "Critical Thinking in Practice: The Priorities and Practices of Instructors Teaching in Higher Education," *Thinking Skills and Creativity* 41 (2021): 100856; Nurul Afni Sinaga et al., "The Effect of Deductive-Inductive Learning Approach on Creative Thinking Ability and Learning Motivation," *Journal of Educational Research and Evaluation* 6, no. 2 (2023): 123–34.

and relevance of the *Qiyasiyah*-Based Instructional Model in addressing the challenges of *Nahwu* learning in the contemporary era.

Based on the premise of Q*iyasiyah* harmony with the cognitive process in language processing, this research hypothesis states that *Qiyasiyah*-based teaching has a significant and greater positive impact than conventional methods on *Nahwu* mastery. This argument is based on how the method emphasizes pattern recognition, similarity search, and analogy formation, which primarily engage middle-order thinking skills (MOTS) such as applying patterns, rather than higher-order thinking. When students actively analyze examples and deduce patterns, their understanding of the rules becomes deeper and more lasting,[9] creating meaningful learning where students act as "discoverers" of the rules. Theoretical support for Pattern-Based Learning reinforces this premise, stating that language is essentially learned through pattern recognition and generalization.[10] Brain activity is also higher in problem-solving areas during analogy learning.[11] Thus, the hypothesis to be tested is that learners involved in this model will not only show better *Nahwu* test results, but will also be able to analyze and apply rules in new contexts more independently. This research has implications for curriculum development, learning design, and Arabic language teacher education in the contemporary era.

A quasi-experimental quantitative research design with a pre-test-post-test control group format was used in this study.[12] This design was considered appropriate[13] because it allowed for a comparison between the experimental group, which received instruction[14] using the *Qiyasiyah* based instructional model, and the control group, which continued conventional instruction, taking into account the initial differences between the two classes that had already been formed. The independent variable (*Qiyasiyah* based instructional model) and its effect on the dependent variable (mastery of *Nahwu*) were measured under controlled conditions to strengthen validity.

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[9] Zi Ye et al., "Analysis of Differences in Self-Regulated Learning Behavior Patterns of Online Learners," *Electronics* 11, no. 23 (2022): 4013.

[10] Kaiyang Zhou et al., "Conditional Prompt Learning for Vision-Language Models," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 2022, 16816–25.

[11] Jean-Pierre Thibaut, Yannick Glady, and Robert M French, "Understanding the What and When of Analogical Reasoning Across Analogy Formats: An Eye-Tracking and Machine Learning Approach," *Cognitive Science* 46, no. 11 (2022): e13208.

[12] Abdul Basith and Nur Imamatun Nisa, "PENGARUH INTERAKSI EDUKATIF GURU SERTA DISIPLIN BELAJAR SISWA TERHADAP HASIL BELAJAR BAHASA ARAB," *BASA Journal of Language & Literature* 4, no. 2 (2024): 66–72.

[13] Nahid Dehghan Nayeri et al., "Statistical Procedures Used in Pretest-Posttest Control Group Design: A Review of Papers in Five Iranian Journals," *Acta Medica Iranica*, 2024.

[14] Hasrian Rudi Setiawan and Mahyudin Ritonga, "The Effectiveness of Online Learning System in Arabic Subject at Al-Ulum Islamic Junior High School Integrated of Medan," *Arabiyatuna: Jurnal Bahasa Arab* 6, no. 1 (2022): 48.

The study population comprised all female students at Madrasah Diniyyah Al Amiriyyah. Purposive sampling was used to select two classes at the *Ulya* level. The sample consisted of two pre-formed groups: class 1D *Ulya* (n=30) was designated as the experimental group, and class 1B *Ulya* (n=28) as the control group. The instructional material focused on a specific *Nahwu* topic, namely *Manshubatul Asma,* to ensure a limited and measurable scope. The intervention was conducted over eight sessions (two sessions per week for four weeks), with each session lasting 45 minutes. Before the intervention, an independent t-test was conducted on the pre-test scores to confirm the two groups' initial equivalence in their baseline understanding of *Nahwu*. The research procedure took place in three separate phases:

First, Pretest phase: both the experimental and control groups receive identical pretest instruments. This test measured basic proficiency in *Nahwu* mastery.

Second, Intervention phase: in this phase, the experimental group (1D *Ulya*) used a *Qiyasiyah*-based instructional model in their learning At the same time, the control group (1B *Ulya*) received the same *Nahwu* instruction, but through a conventional method that emphasized direct explanation and memorization. Both learning groups were controlled by the same instructor to control for the teacher effect variable. To prevent teacher bias and treatment diffusion, an observation sheet was used to monitor the implementation of the instructional model. A trained observer (the researcher) attended all sessions in both classes to ensure that the teacher strictly followed the Qiyas syntax in the experimental group and did not introduce any Qiyas elements into the control group. In the control class, the teacher adhered to the conventional method consisting of direct explanation and memorization activities without analogical reasoning exercises. The intervention for the experimental group was the application of a *Qiyasiyah*-based instructional model, which was systematically designed to integrate analogical reasoning (qiyas) into the core of the learning process. The model was implemented over eight sessions (two session per week for four weeks). The *Nahwu* material tested was *Manshubatul Asma*. This topic was selected because its structural patterns can be analyzed through analogical reasoning; for instance, students were presented with varied examples of *Maf'ul* in different syntactic positions and guided to infer the underlying rules by comparing similarities across sentences. This model was operationalized through a four-phase syntax applied in each meeting:

Table.1. Syntax of the Qiyasiyah-Based Instructional Model

Phase	**Main Activities**	**Pedagogical Objectives**
1. Pattern Presentation	Students are presented with clear examples (Arabic sentences) that contain the target grammatical rules.	Introducing students to linguistic phenomena in context.

	Example: مررت برجل عندك صباحا	
2. Analogy Analysis (Al-Qiyas)	Students are guided to compare and contrast examples, identify recurring patterns and structural relationships.	Promotes inductive reasoning and pattern recognition skills.
3. Formulation of Rules (Al-Istithbaath)	Based on the identified patterns, students collaboratively conclude and verbally state the grammatical rules (qaidah).	Transitioning understanding from concrete examples to abstract grammatical understanding.
4. Applications and Extensions	The students apply the rules they have formulated to analyze new sentences they have never seen before and compose their own examples.	Assessing understanding and encouraging knowledge transfer to new contexts.

Thirth, Post-test and data collection phase: in this phase, both groups completed a post-test that had the same value and difficulty level as the pre-test. After the post-test, a perception questionnaire was distributed only to the experimental group to collect data on their perceptions of learning using the *Qiyasiyah* - based instructional model.

The researcher collected data through a test of *Nahwu* comprehension on the chapter of *Manshubatul Asma'* that had been taught. The comprehension tests were administered twice: once before the intervention and once after. Statistical analysis was performed to measure the effectiveness[15] of using the *Qiyasiyah*-based instructional model. Data processing was carried out systematically by researchers using various techniques, such as modification to ensure data quality, code the data for analysis, perform the data entry, and finally group the results. The researchers then coded the data into statistical software such as SPSS for analysis. The first step was to process the questionnaires data and test the students' understanding of *Nahwu*. This ensured that the data used in this study was sufficient and appropriate for further processing and investigation. After completing the two tests, the authors analyzed the pretest and post-test results using a normality test.[16] The Sapphiro-Wilk technique was used for the normality

[15] Stella Talic et al., "Effectiveness of Public Health Measures in Reducing the Incidence of Covid-19, SARS-CoV-2 Transmission, and Covid-19 Mortality: Systematic Review and Meta-Analysis," *Bmj* 375 (2021).

[16] Nayeri et al., "Statistical Procedures Used in Pretest-Posttest Control Group Design: A Review of Papers in Five Iranian Journals."

test because the sample size was less than 50.[17] In this study, normality and homogeneity tests were used to confirm the validity of the data and the similarity[18] between the two groups. The normality test used the following formula to examine the data:

$$T_3 = \frac{1}{D}\left[\sum_{i=1}^{k} a_i\left(X_{n-i+1} - X_i\right)\right]^2$$

Explanation:

D	= based on the formula below
Xn – i + 1	= the n-i+1 number in the data
Xi	= the i number in the data

To determine whether the pretest and post-test findings for each group were substantially different, the researchers conducted a statistical analysis using an independent samples t-test. This was done to ensure the accuracy and reliability[19] of the results obtained. The following formula can be used to analyze the results of the independent - samples t-test:

$$t_{hitung} = \frac{X1 - X2}{\sqrt{\frac{(n1-1)s_1^2 + (n2-1)s_2^2}{n1+n2-2}\left(\frac{1}{n1} + \frac{1}{n2}\right)}}$$

Description:
Xi = average score or value of group i
ni = number of respondents in group i
Si2 = variance of group i scores

IBM SPSS version 26 processes data using this formula. The next step is data tabulation, which involves presenting data in tables or diagrams to help people interpret the results.

The hypothesis in this study was tested using quantitative methods with a quasi-experimental design. The results of the experimental and control groups were compared using this design. To ensure that the initial *Nahwu* abilities of the experimental and control group were equivalent, a pre-test score analysis was conducted before evaluating the research hypothesis. The experimental group (1D Ulya) had an average pre-test score of 37.00 with a standard deviation of 9.59,

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[17] Yan Wisnu Prajoko, Chandra Hermawan Manapa, and Tsamara Nurwina Nugroho, "Ozonated Aloe Vera Oil Accelerates Radiation Dermatitis Healing in Sprague Dawley Rats.," *Middle East Journal of Cancer* 16, no. 2 (2025).

[18] M Naveed Khaliq and Taha B M J Ouarda, "On the Critical Values of the Standard Normal Homogeneity Test (SNHT)," *International Journal of Climatology: A Journal of the Royal Meteorological Society* 27, no. 5 (2007): 681–87.

[19] E Ebenezer Akpan and Lion J Clark, "Independent T-Test Statistics: It's Relevance in Educational Research," *Int. J. Eminent Sch* 10 (2023): 79–88.

according to descriptive statistical analyses. In contrast, the control group (1B Ulya) had an average score of 37.70 with a standard deviation of 9.12. An independent sample t-test was used to confirm this statistical equivalence. The t-test results showed no significant difference in the initial skills of the two groups, with sigmoid values for class 1D and class 1B Ulya being 0.77 (>0.05) and 0.77 (>0.05), respectively. Therefore, before the intervention, the two groups can be considered equivalent, and any variation in the pre-test results can be attributed to the intervention.

Table 2. Pretest T-Test for Experimental and Control Classes

Statistics group					
	group	N	Mean	Std. Dev	sig
Result	pretest kontrol	28	37.00	9.592	.777
	pretest eksperimen	30	37.70	9.124	.777

A Likert scale-based questionnaire was also used as the main instrument in this study. The purpose of this questionnaire was to measure respondents' attitudes, perceptions, and understanding of the variables under study. The questionnaire consisted of 14 Likert-scale items covering three aspects: A. learning experience with the *Qiyasiyah* method (5 items), B. impact on reasoning *Nahwu* comprehension (5 items), and C. overall perception and satisfaction (4 items). Additionally, two open - ended questions were included to gather students' feedback on the best aspects of the method and areas for improvement. This structure was designed to capture both students' mastery of *Nahwu* rules and abilities as reflected in their self-reported learning experiences. The questionnaire was distributed manually to respondents using paper sheets.

Before processing the primary data, the researcher tested the research instruments, which included the questionnaire and comprehension questions on *Nahwu* lessons. The quality of the instruments influenced the validity of the research results. Validity and reliability tests were conducted.[20] To ensure that the instruments were accurate indicators, several trials were conducted. The results of the validity and reliability tests are as follows.

First, Validity test

Thirty respondents participated in this validity test, and the r table value was obtained using df = n - 2. With a significance level of 5% and 30 - 2 = 28,

[20] Fatwa Arifa et al., "Development of a Web-Based Arabic Competency Test for Indonesian Speakers as a Reference for Measuring Arabic Proficiency Levels of Undergraduate and Graduate Students in Arabic Language Education at Universitas Negeri Jakarta," *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 2 (2025): 651–66.

the r table correlation coefficient value was 0.361.[21] The validity test for this study was conducted using IBM SPSS version 26, with the criteria that a question was considered valid if the calculated r value was greater than the r table value and invalid if the calculated r value was less than the r table value.

Table. 3 Questionnaire Validity Test

Item Statistics		
	Mean	R value
QI	4.03	0.765
Q2	3.97	0.890
Q3	4.20	0.714
Q4	3.83	0.747
Q5	4.03	0.850
Q6	3.57	0.679
Q7	3.93	0.640
Q8	4.03	0.765
Q9	3.97	0.890
Q10	4.20	0.714
Q11	3.83	0.747
Q12	4.03	0.850
Q13	3.57	0.679
Q14	3.93	0.640

Second, Reliability Test

The reliability test in this study was conducted using the Cronbach alpha technique.[22] The validity of this instrument was then tested using the IBM SPSS 26 program. According to the reliability test, the value must be higher than 0.60 to meet the Cronbach alpha requirements.

Table 4. Questionnaire Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N
0.686	14

[21] Ahmad Ahlunnaja and Muhammad Dimyati, "Pengaruh Metode Syawir Terhadap Minat Belajar Bahasa Arab Siswa Madrasah Diniyyah Al Amiriyyah Blokagung Banyuwangi," *TADRIS AL-ARABIYAT: Jurnal Kajian Ilmu Pendidikan Bahasa Arab* 3, no. 2 (2023): 273–92.

[22] Agus Yasin and Hidia Tarauni, "Tashmim Al-Ikhtibar Li Maharah Al-Kalam Al-Â€˜ Arabi Wafqhan Li Al-Ithar Al-Marjaâ€™ i Al-Urubi Al-Musytarak Li Al-Lughat Li Al-Thullab Al-Jamiâ€™ Ah Fi Indunisiya," *Arabiyatuna: Jurnal Bahasa Arab* 7, no. 1 May (2023): 111–34.

The table shows that the questionnaire instrument's reliability test yielded a Cronbach's alpha of 0.686. Therefore, the researchers concluded that the 14 questions administered to the students were reliable. After testing the validity and reliability of the research instrument, the researchers examined the pre- and post-test results for each group, including the experimental and control groups. This was done to assess the effectiveness of the *qiyasiyah*-based instructional model intervention in *nahwu* learning. The pre-test and post-test scores were obtained by completing the questions in the following link: https://drive.google.com/drive/folders/1-q6ILZAFcYSVktuvmzU1QkHs43h_Y0Yz?usp=sharing

Thirt, Normality test

Then, after the scores from the above tasks were collected, the next step was to conduct a normality test. The normality test was conducted before the main data analysis as a form of statistical assumption testing, a prerequisite for parametric analysis.[23] To ensure that the data were normally distributed, a normality test was used. Because the sample size was less than 50, the Shapiro-Wilk test was used for teh normality test. The following is the data obtained.

Table 5. Results of the Normality Test

Normality test			
	Shapiro-Wilk		
Class	Statistic	df	Sig.
pretest control	.967	28	.501
posttest control	.950	28	.196
pretest experimen	.946	30	.130
posttest experimen	.946	30	.129
*. This is a lower bound of the true significance.			
a. Lilliefors Significance Correction			

According to the table, the experimental pretest (sig. = 0.200), the experimental post-test (sig. = 0.096), the control pretest group (sig. = 0.200), and the control post-test all have significance levels above $\alpha = 0.05$. These findings indicate that parametric analysis can be used to further evaluate the data, as there is insufficient evidence to reject the hypothesis that the data come from a normal distribution.

[23] M Rizqon Al Musafiri, Anyes Lathifatul Insaniyah, and Nian Sanjaya Agustin, "Efektivitas Model Pembelajaran Berbasis Proyek Kolaboratif Online Terhadap Pemahaman Konsep Geografi Dan Keterampilan Kolaborasi Siswa dI MA Baiturrahman Banyuwangi," *Majalah Pembelajaran Geografi* 8, no. 1 (2025): 33–43.

Fourth, Homogeneity test

Before the parametric test was conducted, a homogeneity test was performed after the normality test to ensure that the assumption of equal variance between the experimental and control classes was met. The results of the homogeneity test are as follows:

Table. 6 Homogeneity Test Results

Homogeneity test					
		Levene Statistic	df 1	df 2	Sig.
Value	Based on Mean	.104	1	56	.748
	Based on Median	.102	1	56	.751
	Based on Median and with adjusted df	.102	1	51.487	.751
	Based on trimmed mean	.101	1	56	.752

The table shows that Levene's test for variance homogeneity indicates that the assumption of variance homogeneity is met (F = 0.104, df = 1, 56) with a significance level of (p = 0.748). A significance p-value above 0.05 indicates that the variances between the control and experimental groups are homogeneous. The fulfilment of these two statistical assumptions provides strong methodological justification for the use of parametric statistical analysis in testing research hypotheses.

Findings and Discussion

Statistical Description of Learning Outcomes

Based on descriptive analysis of post-test findings, the experimental and control groups showed significant differences. The *Qiyasiyah*-Based Learning Model was given to the experimental group, which obtained an average score of 88.00 with a standard deviation of 7.086. In contrast, the control group, which was taught conventionally, obtained an average score of 76.07 with a standard deviation of 8.046. This difference in mean of 11.93 points provides an initial indication of the intervention's effectiveness and reveals that the experimental group that received special treatment performed better than the control group. The following are the average post-test results obtained by the two groups.

Table 7. Average Results After the Second Test for Both Groups

Group Statistics				
	Class	N	Mean	Std. Dev
Value	Posttest control	28	76.07	8.046
	posttest experimen	30	88.00	7.086

The lower variance in the experimental group (SD = 7.086) compared to the control group (SD = 8.046) indicates that student learning achievement in the experimental group was more evenly distributed. This suggests that *Qiyasiyah*-Based Learning Model is not only effective in improving overall learning outcomes, but also in minimizing achievement gaps between students in the classroom.

In this study, an independent - samples t-test was used to assess significant differences in learning outcomes between the experimental and control groups. With 56 degrees of freedom and a significance threshold of $p = 0.000$, the analysis findings showed a t-value of -6.002. This significance value, which is significantly below $\alpha = 0.01$, provides strong statistical evidence to reject the null hypothesis that there is no difference between the two groups.

Methodologically, statistical significance testing (p-value) alone is insufficient to assess the practical impact of an intervention, underscoring the importance of effect size calculations important. In this study, the effect size was calculated using Cohen's d, a standard measure of the magnitude of the difference between two groups. Statistical calculations comparing the difference between the post-test mean scores of the experimental group (88.00) and the post-test scores of the control group (76.07) and dividing the results by the combined standard deviation of both groups (7.564) yielded a value of $d = 1.58$. Cohen's (1988) criteria classify a large effect as one with a d value ≥ 0.80. Thus, $d = 1.58$ not only indicates a statistically significant difference ($p < 0.001$), but more importantly. Statistically, the use of the Qiyasiyah-Based Instructional Model has been proven effective in improving students' mastery of nahwu rules. The data show a significant difference in learning outcomes between the experimental and control groups, confirming that this method is as a better alternative for *Nahwu* instruction. This alternative means that the Qiyasiyah-Based Instructional Model intervention has a substantial impact on improving students' *Nahwu*.

Table 8. Results of the Independent Sample T-Test

Independent sample t-test						
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Value	Equal variances assumed	.104	.748	-6.002	56	.000
	Equal variances not assumed			-5.975	53.928	.000

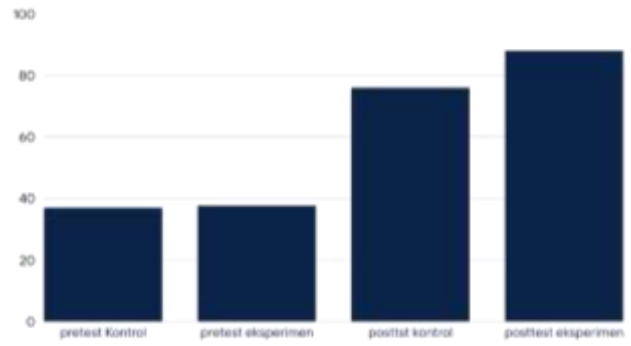

Figure 1. Comparison of Pretest and Posttest Results Between the Control and Experimental Classes

Effectiveness of the *Qiyasiyah*-Based Instructional Model

The findings of this study clearly demonstrate that the *Qiyasiyah*-Based Instructional Model is superior to conventional methods in teaching *nahwu*. An increase in learning outcomes of 11.93 points with a large effect size (d= 1.58) confirms the effectiveness of the analogy and inductive approaches that form the core of the *Qiyasiyah*-Based Instructional Model. Several interrelated factors likely contributed to this strong impact. First, the *Qiyasiyah*-Based Instructional Model operationalizes analogical reasoning through a structured four-phase syntax (pattern presentation, analogy analysis, rule formulation, and application). This syntax directly engages students' middle-order thinking skills (MOTS) specifically pattern recognition and rule application which, according to cognitive load theory, reduces extraneous cognitive load by providing clear exemplars before abstract rules. Unlike conventional methods that present rules first, the inductive progression from examples to rules allows students to construct their own grammatical understanding, leading to deeper encoding and better retrieval. Second, the active learning principles embedded in the model, such as collaborative rule discovery and guided analogical comparison promote elaboration and metacognitive monitoring. Students in the experimental group were consistently required to verbalize similarities between sentence patterns and justify their inferences, a process that strengthens neural pathways associated with analytical reasoning.

This process indicates that the Qiyasiyah approach is particularly effective for lower-achieving students who may struggle with memorizing abstract rules, as the analogical scaffolding provides them with a more accessible entry point. Finally, the eight-session intervention (two sessions per week for four weeks) may have been sufficient to overcome the novelty effect while allowing stable behavioural changes to emerge. The consistent application of the same syntax across sessions likely reinforced students' metacognitive strategies, enabling them to transfer analogical reasoning skills to new grammatical problems – as reflected

in the post-test mean difference of 11.93 points. In sum, the large effect size is not merely a statistical artifact but a tangible outcome of the model's cognitive alignment with how learners naturally process linguistic patterns through analogy and discovery[24].

The findings of this study reinforce and expand on previous findings regarding analogy-based learning. A study by Shodiqul Bahri et al. examined *Nahwu* learning at the Darussalam Magetan Islamic boarding school, where instructional methods based on Q*iyasiyah* were applied with an emphasis on presenting rules followed by examples to explain those rules.[25] However, the study did not mention the extent of improvement in students' understanding of *Nahwu*. in contrast our study describes the extent of improvement in students' understanding of *Nahwu* with the *Qiyasiyah*-Based Instructional Model, namely an effect size of (d = 1.58), possibly because our study used a quantitative field approach so that the data obtained was more structured and systematic.

Theoretically, by combining ancient Arabic linguistic concepts (*qiyasiyah*) with current pedagogy, this study develops ideas about modern Arabic language acquisition. The model developed proves that traditional approaches can be revitalized and adapted to meet the learning needs. Pedagogically, this research offers alternative solutions to chronic problems in *nahwu* learning, which has long been considered difficult and boring. The four phases of the *Qiyasiyah*-Based Instructional Model provide clear operational guidelines for teachers in designing and implementing learning. Teachers often find it difficult to apply innovative methods due to a lack of practical guidance. Therefore, the *Qiyasiyah*-Based Instructional Model, with its clear syntax, can be a solution to this problem.

The nahwu reasoning skills developed through the *Qiyasiyah*-Based Instructional Model have important long-term implications. According to Xiaoling Shu, knowledge acquired through the discovery learning process is more durable and more accessible in real communication than knowledge acquired through memorization.[26] Observations made during the study, in which students in the experimental group had superior skills in interpreting real texts they had never read before, reinforce this conclusion.

Based on the research findings, several steps are recommended for implementing the *Qiyasiyah*-Based Instructional Model in a broader context. First, a comprehensive teacher training program is needed to master the four phases of the *Qiyasiyah*-Based Instructional Model. Second, the development of Qiyas-based teaching materials should be expanded to covera wider range *Nahwu* topics. Third,

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[24] Maureen E Gray and Keith J Holyoak, "Teaching by Analogy: From Theory to Practice," *Mind, Brain, and Education* 15, no. 3 (2021): 250–63.

[25] Shodiqul Bahroyni, Muhammad Irfan Jauzi, and Ririn Binti Solikhah, "IMPLEMENTASI METODE QIYASIYAH DALAM PEMBELAJARAN" 10, no. 02 (2022): 34–44.

[26] Xiaoling Shu and Yiwan Ye, "Knowledge Discovery : Methods from Data Mining and Machine Learning ☆," *Social Science Research* 110, no. October 2022 (2023): 102817, https://doi.org/10.1016/j.ssresearch.2022.102817.

the integration of digital technology can increase the effectiveness of the *Qiyasiyah*-Based Instructional Model, for example through the use of software that allows visualization of grammatical patterns.

For educational institutions, this study justifies for revising the *nahwu* learning curriculum by integrating the qiyas approach. A curriculum oriented towards the development of critical thinking skills through linguistic analysis will be more relevant to the demands of the 21st century. This akigns with UNESCO's recommendations on language education oriented towards the development of global competencies.

Several further research agendas can be developed based on these findings. First, experimental research with a more rigorous design (true experimental design) with random assignment. Second, longitudinal research to test the long-term effects of the *Qiyasiyah*-Based Instructional Model on overall Arabic language proficiency. Third, research on adapting the *Qiyasiyah*-Based Instructional Model to different learning contexts, such as learning for non-Muslims or in non-formal education settings.

Cross-cultural research is also needed to test the generalizability of the *Qiyasiyah*-Based Instructional Model in various cultural contexts. Comparative studies between Muslim and non-Muslim students in *Nahwu* learning using with the qiyas approach can provide valuable insights into cultural factors in Arabic language learning.

This study has several limitations that should be noted. First, the sample included only 58 students, limiting the extent to which the study's results can be applied. Although the effect size was large, replication with a larger sample is needed to ensure consistent results. Second, the research location was limited to one madrasah, thereby reducing the contextual variability that might have influenced the results.

The third limitation concerns the research instruments, which, although validated, may not fully capture of accessing all aspects of complex grammatical reasoning. Aspects such as language intuition and pragmatic competence may require more sensitive measurement instruments.

The relatively short duration of the intervention (4 weeks) may not have been optimal for developing in-depth grammatical reasoning skills. Longer studies are needed to observe the development of more complex abilities. In addition, although the teachers involved had been trained, variations in the implementation of the Qiyasiyah-Based Instructional Model may have occurred and affected the consistency of the treatment.

The final limitation is the lack of measurement of moderator variables such as learning motivation, cognitive style, and students' socioeconomic background, which may interact with the effectiveness of the Qiyasiyah-Based Instructional Model. Future research needs to control for these variables to gain a more comprehensive understanding of the mechanisms underlying the Qiyasiyah-Based Instructional Model.

Conclusion

This study examined the effectiveness of the Qiyasiyah-Based Instructional Model in improving students' mastery of nahwu at Madrasah Diniyyah Al-Amiriyyah. The quasi-experimental results showed a statistically significant difference between the experimental and control groups ($p < 0.001$) with a large effect size (Cohen's $d = 1.58$). These findings indicate that the Qiyasiyah-Based Instructional Model is more effective than conventional methods in enhancing students' understanding of nahwu rules within the specific context of this madrasah.

In practice, the model provides a structured pedagogical framework with a clear four-phase syntax (pattern presentation, analogy analysis, rule formulation, and application) that teachers can implement. The lower standard deviation in the experimental group (SD = 7.086) compared to the control group (SD = 8.046) also suggests that the model helps reduce achievement gaps among students.

The main recommendation from this study is the adoption of the Qiyasiyah-Based Instructional Model in nahwu instruction at similar madrasah diniyyah settings, accompanied by teacher training and the development of qiyas-based teaching materials. Future research should involve larger and more diverse samples, longer intervention periods, and more sensitive instruments to measure different cognitive domains separately (e.g., rule memorization vs. analogical reasoning).

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