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The Effectiveness of Concept Mapping–Based Shorof Instruction in an Islamic Boarding School Context

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Abstract:

The instruction of Sharaf in many Islamic boarding schools remains dominated by teacher-centered and memorization-based methods, resulting in low student engagement and limited conceptual mastery. This study aims to examine the effectiveness of the concept mapping method in improving students' learning outcomes and motivation in shorof instruction. Employing a mixed-methods approach with an embedded quasi-experimental design, the research was conducted at the Islamic Boarding School , involving 24 third-semester students divided into experimental and control groups. Data were collected through observations, interviews, pretests, posttests, questionnaires, and documentation. The findings reveal a significant improvement in the experimental class, with the average score increasing from 63.42 to 90.50, compared to the control class (71.67 to 80.67). Statistical analysis confirmed effectiveness (sig. = 0.014 < 0.05), supported by a high student satisfaction rate (90.3%). This study contributes empirical evidence on the application of concept mapping in *shorof learning* and recommends its integration into *pesantren*-based Arabic instruction to enhance conceptual understanding and learner engagement.

Keywords: *Shorof learning, Concept Mapping Method, Learning Effectiveness*

Abstrak:

Pengajaran Sharaf di banyak *pesantren* masih didominasi oleh metode yang berpusat pada guru dan berbasis hafalan, sehingga mengakibatkan rendahnya keterlibatan siswa dan penguasaan konsep yang terbatas. Studi ini bertujuan untuk menguji efektivitas metode pemetaan konsep dalam meningkatkan hasil belajar dan motivasi siswa dalam pengajaran shorof. Dengan menggunakan pendekatan metode campuran dengan desain kuasi-eksperimental terintegrasi, penelitian ini dilakukan di *Pesantren* , yang melibatkan 24 siswa semester tiga yang dibagi menjadi kelompok eksperimen dan kontrol. Data dikumpulkan melalui observasi, wawancara, pretest, posttest, kuesioner, dan dokumentasi. Hasil penelitian menunjukkan peningkatan yang signifikan pada kelas eksperimen, dengan nilai rata-rata meningkat dari 63,42 menjadi 90,50, dibandingkan dengan kelas kontrol (71,67 menjadi 80,67). Analisis statistik mengkonfirmasi efektivitas (sig. = 0,014 < 0,05), didukung oleh tingkat kepuasan siswa yang tinggi (90,3%). Studi ini memberikan bukti empiris tentang penerapan pemetaan konsep dalam pembelajaran shorof dan merekomendasikan integrasinya ke dalam pengajaran bahasa Arab berbasis *pesantren* untuk meningkatkan pemahaman konseptual dan keterlibatan peserta didik.

Kata Kunci: *Pembelajaran Shorof, Metode Pemetaan Konsep, Efektivitas Pembelajaran*

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INTRODUCTION / المقدمة

Arabic language competence remains a fundamental requirement for understanding Islamic primary sources, particularly the Qur'an and classical Islamic texts that shape religious, legal, and moral discourses within Muslim societies. One crucial yet often underestimated component of Arabic mastery is *shorof* (Arabic morphology), which governs word formation and semantic transformation. The importance of *shorof* lies in its instrumental role in ensuring linguistic accuracy and textual comprehension; without it, Arabic usage becomes structurally flawed and semantically ambiguous (Ibrahim, 2024; Khan, 2020; Torjmen et al., 2020). Empirical evidence from Islamic educational institutions indicates that inadequate mastery of *shorof* leads to persistent difficulties in reading, interpreting, and contextualizing classical texts. Consequently, strengthening *shorof* instruction is not merely an academic concern but a societal necessity, as it directly influences the quality of religious understanding and transmission of Islamic knowledge (Kodner & Khalifa, 2022; Paradis et al., 2020). Therefore, effective pedagogical strategies for *shorof learning* are essential to support sustainable Islamic education and to ensure that future generations can engage critically and accurately with foundational Islamic sources.

Despite its strategic importance, *shorof learning* continues to face systemic challenges within many Islamic educational settings, particularly in traditional Islamic boarding schools (*pesantren*). The primary issue lies in the dominance of conventional teacher-centered instructional methods that prioritize rote memorization over conceptual understanding. Such approaches often fail to accommodate diverse learning styles and tend to limit students' active engagement in the learning process (Ali et al., 2020; Tallas-Mahajna, 2024). As a result, students frequently experience cognitive overload, reduced motivation, and superficial comprehension of morphological patterns. This pedagogical condition reflects a broader educational problem in society, where learning processes emphasize content delivery rather than meaningful knowledge construction. The persistence of ineffective instructional strategies not only hinders individual academic achievement but also weakens the broader objective of producing learners who are linguistically competent and intellectually autonomous (Al-Sulaihim et al., 2024; Ismail et al., 2019). Consequently, addressing methodological shortcomings in *shorof learning* becomes an urgent educational priority with implications for both institutional quality and societal literacy in Islamic knowledge.

Field observations conducted at the Ihyaul Qur'an Nururrahman Islamic Boarding School in Wagir, Malang, reveal concrete manifestations of these pedagogical challenges.

Shorof instruction is predominantly delivered through inductive and lecture-based methods, where educators write morphological rules on the board, provide examples, and expect students to memorize patterns passively. This learning environment places students as recipients rather than constructors of knowledge, resulting in minimal interaction, limited discussion, and low student participation (Huda, 2024; Islamic et al., 2024). Consequently, many students exhibit signs of boredom, declining motivation, and difficulty in retaining and applying morphological concepts. These conditions directly affect students' learning outcomes, particularly their ability to analyze word structures independently (Mashaqba et al., 2020; Smirnov, 2023). The observed phenomenon highlights a misalignment between instructional methods and learners' cognitive needs, indicating the necessity for more interactive, student-centered approaches that encourage active engagement and conceptual integration in *shorof learning*.

Previous studies have emphasized the importance of instructional methods in enhancing learning effectiveness. Asadi et al. (2023) and Al-Jarf (2020) underline that *shorof* functions as the foundational science of Arabic morphology, yet they do not explore innovative pedagogical strategies for its instruction. Zaretsky (2023) and Bernikova (2022) demonstrates that learning motivation is strongly influenced by teaching methods, suggesting that monotonous approaches reduce students' interest and comprehension. Khalifa et al. (2024) and Saiegh-Haddad et al. (2023) further argue that learning success is closely tied to the suitability and efficiency of instructional techniques employed by educators. Additionally, Binks et al. (2021), Troussas et al. (2020), and Liu et al. (2024) highlight that cooperative learning models can enhance student engagement, collaboration, and academic achievement. While these studies provide valuable insights into learning motivation and instructional effectiveness, they largely remain theoretical or general in scope and do not specifically address *shorof learning* within *pesantren* contexts using structured visual learning strategies.

More specifically, research on the concept mapping method has been conducted in various Islamic subjects. For instance, examines the implementation of concept mapping in Islamic cultural history learning, focusing on teachers' considerations and instructional realization (Glasserman, 2023; Masnawati et al., 2022). However, her study does not empirically measure the effectiveness of concept mapping on learning outcomes, nor does it address linguistic subjects such as shorof. Other studies tend to apply concept mapping in general education or social science contexts, leaving a significant gap in its application to Arabic morphology learning in Islamic boarding schools. Therefore, existing literature lacks empirical evidence on how concept mapping influences students' motivation, engagement, and comprehension in *shorof* instruction (Primahendra et al., 2024). This research positions itself to fill this gap by systematically examining the effectiveness of the concept mapping method in *shorof learning* within a *pesantren* environment.

The novelty of this study lies in its integration of the concept mapping method into *shorof learning*, a subject traditionally taught through memorization and repetitive drills.

Unlike previous studies that focus on general learning motivation or non-linguistic subjects, this research applies a visual and cognitive learning strategy to Arabic morphology instruction. By mapping morphological patterns and conceptual relationships, students are encouraged to actively construct knowledge, connect new concepts with prior understanding, and collaboratively engage in the learning process (Hardie, 2021; Zouaoui et al., 2024). This approach represents a state-of-the-art pedagogical innovation within *pesantren*-based Arabic education, where empirical studies on student-centered morphological learning remain limited. Addressing this gap is essential, as it offers an alternative instructional model that aligns with contemporary educational paradigms emphasizing active learning, conceptual understanding, and learner autonomy.

Based on the identified problems and research gaps, this study addresses the following research problem: How effective is the concept mapping method in improving students' understanding and learning motivation in *shorof* instruction at the Ihyaul Qur'an Nururrahman Islamic Boarding School? The central argument of this study is that concept mapping, as a student-centered and cooperative learning method, can significantly enhance students' engagement and comprehension by organizing complex morphological rules into interconnected visual representations. This method allows students to move beyond memorization toward meaningful understanding, thereby improving learning effectiveness. The argument is grounded in constructivist learning theory, which emphasizes knowledge construction through active participation and cognitive organization.

This study contributes both theoretically and practically to the field of Islamic education and Arabic language pedagogy. Theoretically, it enriches the discourse on innovative instructional methods for *shorof learning* by providing empirical evidence on the effectiveness of concept mapping within a *pesantren* context. Practically, it offers educators a viable alternative to traditional teaching methods, enabling more engaging and effective *shorof* instruction. By demonstrating how concept mapping can enhance learning outcomes and motivation, this research supports the development of more responsive and student-centered pedagogical practices in Islamic boarding schools. Ultimately, the findings are expected to inform curriculum development and instructional strategies aimed at strengthening Arabic linguistic competence and sustaining the quality of Islamic education.

RESEARCH METHOD / المنهجية

This study employed a mixed-methods approach using an embedded experimental design, as proposed by (Creswell & Clark, 2011), in which qualitative data were integrated within a quasi-experimental quantitative framework. The qualitative component was selected to obtain an in-depth understanding of how *shorof* instruction is implemented using the concept mapping method, including teaching strategies, classroom interactions, and students' learning responses. This design was chosen because it allows qualitative findings to contextualize and explain quantitative results, thereby providing a more comprehensive understanding of instructional effectiveness. The quantitative component adopted a quasi-experimental design, as the researcher could not randomly assign

participants or fully control external variables influencing the learning process (Sugiyono, 2023). This approach enabled the researcher to examine the effectiveness of the concept mapping method by comparing students' learning outcomes before and after the intervention.

The research was conducted at the Ihyaul Qur'an Nururrahman Islamic Boarding School in Wagir, Malang. This location was chosen due to its consistent implementation of *shorof* instruction using classical Arabic texts and its openness to pedagogical innovation. The research participants consisted of all third-semester students, with a total sample of 24 students selected through purposive sampling. The experimental group comprised 12 female students, while the control group consisted of 12 male students, both at the same academic level. In addition, one *short-of-a-teacher served as a key informant, providing pedagogical insights drawn from professional experience and an* educational background in Islamic education. The participants' backgrounds reflect typical *pesantren* learners who engage intensively with Arabic linguistic studies.

Data were collected through multiple techniques to ensure methodological rigor, including classroom observations, semi-structured interviews, documentation analysis, achievement tests, and questionnaires (Amin & Sumendep, 2022). Observations and interviews were used to capture qualitative data related to teaching practices and student engagement, while documentation supported institutional and instructional context analysis. Quantitative data were obtained through pretests and posttests to measure students' learning outcomes, as well as questionnaires to assess learning motivation. Data analysis followed an interactive model consisting of data condensation, data reduction, data display, and data verification. Qualitative data were condensed and categorized to identify recurring patterns, then displayed narratively to support interpretation, while quantitative data were analyzed by comparing pretest and posttest scores to determine learning effectiveness. Data validity was ensured through triangulation of data sources and techniques, prolonged engagement in the field, and member checking with key informants to confirm the credibility and consistency of the findings.

FINDINGS AND DISCUSSION / نتائج البحث و المناقشة

Result

This section presents the results of the study examining the implementation and effectiveness of the concept mapping method in *shorof learning*. The findings are derived from qualitative observations and interviews as well as quantitative data obtained through pretests, posttests, statistical analyses, and student questionnaires. Together, these results provide a comprehensive overview of learning processes, outcomes, and student responses.

Shorof learning using the Concept Mapping Method

In this research, the researcher conducted observations and interviews on

Wednesday, December 18, 2024. In the observation, the researcher examined the teaching method employed by the teacher during the teaching exchange in the third semester. Morphology in the third semester uses an inductive process: the teacher writes only the material on the board and then explains and reads from examples, statements, and conclusions. This is also consistent with the results of the interview with teacher Annisa Nur Auliyah, a teacher for the exchange lesson in the third semester, she said: "The method I usually use is the inductive method in the first step, I write the material on the board, then I give an explanation and read everything starting from examples, statement and conclusion".

Similar to what the professor said about the method used in teaching morphology, Radinka Putri Elyansyah, as a student of the third class for girls, said: "The method used by the teacher in teaching morphology is first that the teacher writes the examples on the board, then explains and reads the examples, and then gives the statement and conclusion". Similarly, Naufal Azki Fadilah, a student of the third grade for boys, said: "First the teacher writes the examples on the board, then she reads and explains the examples, the statement, and the summary in the book, then if something is not understood, the teacher will explain what is on the board again". Next, the researcher applied the method of education in four meetings for the experimental class. The following are the steps for teaching exchange for experimental classes:

Planning

As a researcher before conducting research in this field, it is first necessary to design what will be carried out in the field, so that the implementation of treatment runs well and obtains results that are in accordance with what is expected. In this treatment, the researcher applied *shorof learning* using the Concept Mapping Method at the Ihyaul Qur'an Nururrahman Islamic Boarding School in Wagir Malang. During the implementation of the activity, the researcher prepares *shorof* evaluation indicators and a plan for the implementation of daily learning to support the activities to be carried out.

Implementation

The First Meeting

The researcher held the first meeting on Saturday, December 21, 2024 in class three girls of Ihyaul Qur'an Nururrahman Islamic Boarding School in Wagir Malang. This meeting aims to provide a pre-test so that the researcher knows the extent of the student's understanding and mastery of the *shorof* material before the application of the Concept Mapping Method and provides a clear picture to the researcher about the strengths and weaknesses of the students' academic performance, which helps to improve and modify learning methods in the future.

The researcher entered the 3rd grade of Banat at the beginning of the lesson, opening the learning with greetings and praying together led by one of the students. The researcher checks the attendance of the students and the researcher introduces himself to the students. Then, the researcher distributes the pre-test question paper, explaining how to do it and the students work on the pre-test questions under the supervision of the

researcher. After completing the pre-test, the researcher asked the students to collect the pre-test question paper that had been answered and explain to them the material that would be taught at the next meeting. At the beginning of the lesson, the researcher began to provide the learning material that he would teach at that time.

For example, the researcher begins to convey competencies, then presents the material, provides examples of how to make concept mapping, divides into several groups, the researcher chooses ideas related to the material being studied, students make a concept map, each group writes words that explain the relationship between other concepts, collects the results of the work and presents it, then corrects the concept maps presented, and the researcher invites students Formulate conclusions on the material that has been studied. And the researcher ends the learning process by reciting prayers and giving greetings.

The Second Meeting

The researcher held the second meeting on Thursday, December 26, 2024. This meeting aimed to provide material on al-mizan ash-shorfi, al-mashdar, al-awzanu al-gholibatu fi mashdar al-fi'lu ats-tsulatsi, and awzanu mashdar al-fi'lu ar-ruba'I al-huruf, using the Concept Mapping Method. The steps used by the researcher are as follows: The researcher entered the class three of girls at the beginning of the lesson, opened the learning with greetings and prayed together led by one of the students, checking the presence of the students. Before the researcher started teaching, he explained how to teach using the Concept Mapping Method and conveyed the competencies to be achieved to students. In this material, the researcher presents material on al-mizan ash-shorfi in the form of Concept Mapping written on the board and tells students how to make Concept Mapping.

The researcher also provides learning motivation to students and continue learning. The students were formed into 3 groups by researchers, each group consisted of 4 students out of a total of 12 students. The researcher distributed pieces of cards that had written the main concepts, namely al-mashdar, al-awzanu al-gholibatu fi mashdar al-fi'lu ats-tsulatsi, and awzanu mashdar al-fi'lu ar-ruba'I al-huruf, each group got one main concept. Each group was given the opportunity to try several times to create a map that depicted the relationships between the concepts by drawing a connecting line between the concepts. After completing the Concept Mapping, the researcher asked the students to collect the results of the group work and asked them to present it. The researcher invites all students to make corrections or evaluations of the concept maps that have been presented and invites students to formulate conclusions on the *shorof* material that has been studied. Then, the researcher conveys the material that will be studied at the next meeting. The researcher ended the learning process by reciting prayers and giving greetings.

The Third Meeting

The researcher held the third meeting on Monday, December 30, 2024. At this meeting, the aim was to provide material on awzanu mashdarnal-fi'lu al-khumasi wassudasi, al-mashdar shina'I, ismu al-maroh, and ismu al-hay'ah, using the Concept

Mapping Method. The steps used by the researcher are as follows: The researcher entered the class three of girls at the beginning of the lesson, opened the learning with greetings and prayed together led by one of the students, checking the presence of the students. Before the researcher started teaching, he conveyed the competencies he wanted to achieve to the students. In this material, the researcher presents material about awzanu mashdarnal-fi'lu al-khumasi wassudasi in the form of Concept Mapping written on the board and tells students how to make Concept Mapping. The researcher also provides learning motivation to students and continue learning. The students were formed into 3 groups by researchers, each group consisted of 4 students out of a total of 12 students.

The researcher distributed pieces of cards that had the main concepts, namely al-mashdar shina'I, ismu al-maroh, and ismu al-hay'ah. Each group got one main concept. Each group was given the opportunity to try several times to create a map that depicted the relationships between the concepts by drawing a connecting line between the concepts. After completing the Concept Mapping, the researcher asked the students to collect the results of the group work and asked them to present it. The researcher invites all students to make corrections or evaluations of the concept maps that have been presented and invites students to formulate conclusions on the *shorof* material that has been studied. The researcher ended the learning process by reciting prayers and giving greetings.

The Fourth Meeting

The researcher held the fourth meeting on Saturday, January 4, 2025. This meeting aimed to provide a post-test so that the researcher found out the extent of students' understanding and mastery of *shorof* material after the application of the Concept Mapping Method. The researcher entered the classroom with three girls at the beginning of the lesson, opening the lesson with greetings and a prayer led by one of the students. The researcher checks students' attendance and introduces himself. Then, the researcher distributed the post-test question paper, explaining how to do it, and the students did the post-test questions under the supervision of the researcher. After completing the post-test, the researcher asked students to collect their completed post-test questionnaires. The researcher concludes the learning process by reciting prayers and offering greetings.

The Effectiveness of *Shorof learning* using the Concept Mapping

The effectiveness of *shorof learning* using the concept mapping method is reflected in the significant improvement of students' learning outcomes after the instructional intervention. The application of this student-centered and visual learning strategy facilitated deeper conceptual understanding, increased learning engagement, and produced higher achievement compared to conventional instructional methods, demonstrating its effectiveness in enhancing *shorof learning*.

Control Class Pretest and Posttest Results

The control class pretest and posttest results provide an overview of students' *shorof learning* achievement under conventional instructional methods. These results are

used as a baseline to compare learning outcomes between students taught through traditional inductive approaches and those receiving the concept mapping intervention. By examining changes in average scores and performance categories, this data illustrates the extent to which conventional teaching methods contribute to students' understanding of shorof. The findings from the control class serve as a reference point for assessing the relative effectiveness of the concept mapping method applied in the experimental class.

Table 1 Control Class Pretest and Posttest Results

NO	Name	Pretest		Posttest	
		Value	Category	Value	Category
1.	Abdul Afif	75	Good	78	Good
2.	Adnan Rafidillah	65	Sufficient	70	Sufficient
3.	Aqib Zaidan Shobri Aufa	79	Good	91	Superior
4.	Argan Nabihan Al-Ahqoof	81	Very Good	97	Superior
5.	Inzaghi Wahyu Fardinansyah	60	Less	69	Less
6.	Javanda Uno Satria	72	Good	76	Good
7.	Khaleev Gathfhan Muhammad	61	Sufficient	65	Sufficient
8.	M. Fathoni Alfarizi	69	Sufficient	77	Good
9.	M. Nabil Anugrah	74	Good	80	Good
10.	Naufal Azka Fadillah	82	Very Good	88	Very Good
11.	Sigit Bagaskara	70	Sufficient	95	Superior
12.	Susilo Agung Putra	72	Good	82	Very Good
Total		**860**		**968**	
Average		**71,67**		**80,67**	

Based on the table above about the average score obtained in the pretest was 71.67. Meanwhile, students are at the superior level (0), the very good level (2), the good level (5), the sufficient level (4), the level is less (1), and the level is very less level (0). From this, the level of understanding of students is "good". The average score obtained from the posttest was 80.67. Meanwhile, students are at the superior level (3), the very good level (2), the good level (4), the sufficient level (2), the less level (1), and the very less level (0). From this, the level of understanding of students is "good".

Experimental Class Pretest and Posttest Results

The experimental class pretest and posttest results present an overview of students' *shorof learning* achievement after the implementation of the concept mapping

method. These results describe changes in students' understanding before and after the instructional intervention, serving as the primary indicator of learning effectiveness. By comparing pretest and posttest scores, the data highlights the impact of student-centered and visual learning strategies on conceptual mastery of shorof. The findings from the experimental class provide empirical evidence to evaluate the effectiveness of the concept mapping method in enhancing students' learning outcomes.

Table 2 Experimental Class Pretest and Posttest Results

Number	Name	Pretest		Posttest	
		Value	Category	Value	Category
1.	Annida Yuniza	50	Very Less	78	Good
2.	Annidya Khoirunnisa	57	Less	83	Very Good
3.	Aulia Bilqis Putri Fadhilah	54	Less	79	Good
4.	Azizah Khansa Kurnia	63	Sufficient	92	Superior
5.	Cahaya Athifah Izah	72	Good	95	Superior
6.	Fauzhia Zhahra Naura Majid	60	Less	97	Superior
7.	Huriyah Inasywa Nail Fa'aroh	65	Sufficient	93	Superior
8.	Olivia Maia Ockta	70	Sufficient	100	Superior
9.	Radinka Putri Elyansyah	80	Good	96	Superior
10.	Rahma Anavia	55	Less	88	Very Good
11.	Xenia Is Zanabis Putri	53	Less	87	Very Good
12.	Zafina Bilqisth Al-Hafi	82	Very Good	98	Superior
	Total	**761**		**1086**	
	Average	**63,42**		**90,5**	

Based on the table above about the average score obtained from the pretest was 63.42. Meanwhile, students are at the superior level (0), the very good level (1), the good level (2), the sufficient level (3), the less level (5), and the very less level (1). From this, the level of understanding of students is "less". The average score obtained from the posttest was 90.5. Meanwhile, students are at the superior level (7), the very good level (3), the good level (2), the sufficient level (0), the less level (0), and the very less level (0). From this, the level of understanding of students is "superior".

Normality Test Results

The normality test is part of the testing required in data analysis before performing hypothesis testing. The researcher used a normality test based on Shapiro Wilk's decision,

because the number of samples in this study was less than 50 samples. The basis of this test is that if the value of sig. greater than 0.05 then the data is normally distributed.(Mulyati et al., 2024)

Table 3 Normality Test Results

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	df	Sig.	Statistic	df	Sig.
Hasil Belajar Shorof	Pretest Eksperimen	.144	12	.200*	.928	12	.358
	Posttest Eksperimen	.163	12	.200*	.923	12	.316
	Pretest Kontrol	.105	12	.200*	.955	12	.708
	Posttest Kontrol	.115	12	.200*	.958	12	.757

Based on the normality test results presented in the table, it can be concluded that the pretest and posttest data from both the control and experimental classes were normally distributed. This indicates that the data met the assumptions required for further parametric statistical analysis, allowing hypothesis testing to be conducted reliably and ensuring the validity of subsequent inferential statistical procedures used in this study.

Homogeneity Test Results

The researcher used the homogeneity test in this study to find out whether the data used was homogeneously distributed or not. The basis used in this test is that if the value of sig. greater than 0.05 then the data is homogeneously distributed. (Wulandari et al., 2023)

Table 4 Homogeneity Test Results

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil Belajar Shorof	Based on Mean	1.102	1	22	.305
	Based on Median	.979	1	22	.333
	Based on Median and with adjusted df	.979	1	20.375	.334
	Based on trimmed mean	1.112	1	22	.303

Based on the homogeneity test results shown in the table, the significance value based on the mean was 0.305, which is greater than 0.05. This indicates that the variance of the data between the control and experimental classes was homogeneous, fulfilling the statistical assumption required for conducting further comparative analysis between the two groups.

Independent Sample T-Test Results

The next step in data analysis in this study is the Independent Sample T-Test. The purpose of this test was to compare the average of two unrelated groups. The basis for this test is that if the value sig. (2 tailed) is smaller than 0.05 then H_0 is rejected and H_a is accepted.

Table 5 Independent Test Results of T-Test Samples

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Nilai	Equal variances assumed	1.102	.305	-2.675	22	.014	-9.833	3.676	-17.457	-2.210
	Equal variances not assumed			-2.675	20.015	.015	-9.833	3.676	-17.501	-2.166

Based on the table above, the researcher obtained the results of the Independent T-Test Sample with a sig value. Leven's Test for Equality of Variances of 0.305 is greater than 0.05 which means that the variance of data between the experimental class and the control class is homogeneous. Independent Testing The T-Test sample for N-Gain in this study depends on the significance value contained in the Equal Variances Assumed. The Sig. (2-tailed) value in the Equal Variances Assumed in this test is 0.014 less than 0.05 which means that the hypothesis of this study is H0 rejected and Ha accepted. It can be concluded that the use of the Concept Mapping method is "effective" in learning *shorof* at the Ihyaul Qur'an Nururrahman Islamic Boarding School in Wagir Malang.

Student Satisfaction Questionnaire Results

The researcher held a student satisfaction questionnaire on Monday, January 6, 2025, to see the response/satisfaction of students to the method applied, namely the concept mapping method in *shorof learning* in class three of girls Ihyaul Qur'an Nururrahman Islamic Boarding School in Wagir Malang. The results of the satisfaction questionnaire for class three students of girlsare as follows:

$$p = \frac{\sum x}{\sum x_1} \times 100\%$$
$$= \frac{56+53+57+52+55+53+55+53+54+54}{60\times 10} \times 100\%$$
$$= \frac{542}{600} \times 100\%$$
$$= 90{,}3\%$$

Based on the calculation above about the results of the student satisfaction questionnaire which shows that the results obtained from the assessment of all respondents' answers with a total of 542 and a maximum score of 600, so that the average percentage score of 90.3% was obtained. Based on the percentage of assessment scores

obtained of 90.3%, the criteria for the student satisfaction questionnaire instrument were declared "very good". So it can be concluded that the students' response to the use of the Concept Mapping method in *shorof learning* at the Ihyaul Qur'an Nururrahman Islamic Boarding School in Wagir Malang was stated to be "very positive and strong".

Discussion

The findings of this study indicate that *shorof learning* at the Ihyaul Qur'an Nururrahman Islamic Boarding School was initially dominated by a conventional inductive approach, characterized by teacher-centered instruction and limited student participation. This condition is consistent with previous studies emphasizing that traditional instructional methods in Arabic grammar and morphology often rely heavily on explanation and memorization, which may hinder students' active engagement and conceptual understanding (de Luca, 2021; Rajab, 2020). The observational and interview data in this study confirm that such approaches tend to position students as passive recipients of knowledge, resulting in low motivation and limited interaction during learning activities. These findings reinforce the existing literature highlighting the need for more interactive, student-centered learning strategies in Islamic educational contexts to improve both cognitive and affective learning outcomes.

The quantitative findings further demonstrate a clear difference between students taught using conventional methods and those taught using the concept mapping method. While the control class showed a moderate increase in average scores from pretest to posttest, the improvement remained within the same achievement category, indicating incremental learning gains (Issa et al., 2024; Kitsiou & Kondyli, 2020). This result aligns with Haskel (2021) and Ali et al. (2020) argument that traditional methods can maintain learning continuity but are often insufficient to significantly enhance higher-order understanding. In contrast, the experimental class experienced a substantial improvement in learning outcomes, with a notable shift from lower achievement categories in the pretest to predominantly superior performance in the posttest. This contrast highlights that instructional innovation plays a critical role in determining the depth and quality of students' learning.

The effectiveness of the concept mapping method observed in this study is consistent with prior research emphasizing the benefits of cooperative and visual learning strategies. Al-Haddad et al. (2024) found that cooperative learning models promote student interaction, motivation, and productivity, while Wallace et al. (2022) and Garia et al. (2024) argue that concept mapping helps learners organize knowledge, integrate new and prior concepts, and construct understanding independently. The significant improvement in the experimental class supports these assertions, demonstrating that concept mapping enables students to visualize complex morphological relationships, thereby facilitating deeper comprehension of shorof concepts. Unlike previous studies such as Tseng (2020) and Peñuela-Epalza (2022) which focused primarily on the implementation of concept mapping without measuring learning effectiveness, this study

provides empirical evidence of its impact on learning outcomes, thereby addressing an important research gap.

From a theoretical perspective, the findings of this study support constructivist learning theory, which emphasizes that knowledge is actively constructed through interaction, reflection, and cognitive organization. The use of concept mapping allowed students to actively engage in meaning-making processes by linking morphological patterns and concepts visually and collaboratively. This process contrasts sharply with rote memorization practices and demonstrates how learning environments that promote student autonomy and interaction can enhance conceptual mastery. The statistically significant results obtained through the independent sample t-test further strengthen the theoretical claim that student-centered instructional strategies are more effective in facilitating meaningful learning than traditional teacher-centered approaches, particularly in complex subjects such as Arabic morphology.

Practically, this study offers important implications for shorof instruction in Islamic boarding schools and similar educational institutions. The high level of student satisfaction and positive responses toward the concept mapping method indicate that this approach not only improves academic achievement but also enhances learners' motivation and engagement. These findings suggest that educators and curriculum developers should consider integrating concept mapping into shorof instruction as an alternative or complement to conventional methods. By adopting more interactive and visually structured teaching strategies, Islamic educational institutions can improve the quality of Arabic language instruction and more effectively and sustainably support the development of students' linguistic competence.

CONCLUSION / الخلاصة

This study concludes that the implementation of the concept mapping method in *shorof learning* at the Ihyaul Qur'an Nururrahman Islamic Boarding School has a significant positive impact on students' learning outcomes and engagement. The learning process, which emphasized student-centered activities such as collaborative concept construction, visual representation of morphological patterns, and guided reflection, enabled students to develop a deeper conceptual understanding of shorof. The most important insight gained from this research is that effective shorof instruction requires more than memorization of rules; it demands learning strategies that actively involve students in organizing and connecting linguistic concepts. Quantitative findings confirmed this conclusion, as the experimental class showed a statistically significant improvement compared to the control class, supported by the independent sample t-test results (sig. = 0.014 < 0.05). In addition, students' highly positive responses toward the learning method indicate that concept mapping not only enhances cognitive achievement but also strengthens motivation and learning satisfaction.

The main strength of this study lies in its contribution to Islamic education and

Arabic language pedagogy by providing empirical evidence on the effectiveness of concept mapping in *shorof learning* within a *pesantren* context. By integrating qualitative insights with quantitative analysis through an embedded experimental design, this research enriches the methodological and theoretical discourse on student-centered learning in Islamic boarding schools. Nevertheless, this study has several limitations that should be acknowledged. The relatively small sample size and the focus on a single institution limit the generalizability of the findings. Additionally, the duration of the intervention was relatively short, which may not fully capture long-term learning retention. Therefore, future research is recommended to involve larger and more diverse samples, apply longitudinal designs, and explore the integration of concept mapping with digital learning tools to further enhance the effectiveness of shorof instruction.

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