AL-MA'RIFAH
Jurnal Budaya, Bahasa, dan Sastra Arab
(Journal of Arabic Culture, Language, and Literature)

Vol. 22, No. 2, October 2025, 179–194
P-ISSN: 1693-5764
E-ISSN: 2597-8551

# The Influence of Ausubel's Theory on Nahwu Learning Outcomes at Nurul Huda Malang

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**Abstract**
This study aims to determine the effect of applying David Ausubel's cognitive theory on students' *Nahwu* learning outcomes at Madrasah Diniyah Nurul Huda Malang. The research used a pre-experimental design with one group pre-test and post-test. The subjects were 20 students who received learning treatment based on Ausubel's cognitive theory. Data were collected through pre-test and post-test results and analyzed using the Wilcoxon test. The findings revealed a significant improvement in students' *Nahwu* learning outcomes after applying Ausubel's cognitive theory, as indicated by the Wilcoxon test (Z = -3.738, Asymp. Sig. (2-tailed) = 0.000 < 0.05). These results suggest that integrating meaningful learning principles enhances students' ability to connect new knowledge with prior understanding, thereby improving conceptual mastery in *Nahwu*. Theoretically, this study reinforces Ausubel's claim that prior knowledge is a key determinant in cognitive development. Pedagogically, the findings encourage Arabic language educators to design learning experiences that activate students' existing knowledge structures to achieve deeper, more sustainable learning outcomes.

**Keywords**
David Ausubel's cognitive theory;
Meaningfull learning;
*nahwu* learning;
learning outcomes.

## Introduction

According to Aufa (2018), learning is a conscious effort teachers make to guide students in interacting with various learning resources to achieve predetermined goals. In Arabic language education, *nahwu* (Arabic grammar) is central because it determines students' ability to construct and understand correct sentence structures. Maulidia explains that *nahwu* learning focuses on mastering Arabic grammatical rules and linguistic style. Huda (2020) defines *nahwu* as a system of rules that helps identify the position and function of words within Arabic sentences. Mastery of *nahwu* is essential for understanding Arabic texts, notably the Qur'an, Hadith, and classical Islamic literature, which scholars frequently use to derive Islamic laws (Mualimah et al., 2019). For this reason, most Islamic schools in Indonesia, including Madrasah Diniyah Nurul Huda Malang, integrate *nahwu* as a core subject in their curriculum.

Empirical observations conducted at Madrasah Diniyah Nurul Huda Malang in 2022 revealed that the *nahwu* learning process remains dominated by traditional grammatical-translation methods. Class participation is relatively low, with more than 70% of students relying solely on rote memorization without demonstrating comprehension in practice sessions. Teachers reported difficulties engaging students during lessons, while mid-semester assessment results indicated that only 45% of students met the minimum mastery criterion (KKM). These findings illustrate that the

Available online at
http://journal.unj.ac.id/unj/index.php/jba/index
DOI: 10.21009/almakrifah.22.02.03

current instructional approach has not yet fostered meaningful understanding or active student engagement in *nahwu* learning.

Normatively, effective *nahwu* instruction should encourage students to link new grammatical concepts with their existing linguistic knowledge and experiences, creating meaningful learning as proposed by David Ausubel's cognitive theory. However, classroom reality reveals a discrepancy between this pedagogical ideal and actual teaching practices. To bridge this gap, the application of Ausubel's meaningful learning theory is considered relevant, as it emphasizes the integration of new information into students' prior knowledge structures, thereby enhancing comprehension, retention, and motivation in learning *nahwu*.

According to Ainin (2019), the urgency and strategy for learning *nahwu* require appropriate learning methods or techniques. *Nahwu* learning methods or strategies at Madrasah Diniyah Nurul Huda tend to be dominated by grammatical and translation methods. In its use, this method does not involve students in the learning process; the implication is that students' involvement in understanding, applying, or analyzing *nahwu* science in a text becomes low or passive. In practice, this method is also less effective because no students ask questions during the learning process, and it seems boring to them. Seeing the problems with *nahwu* learning—tending to be passive and uninteresting—researchers aim to develop an active, engaging *nahwu* learning method that increases motivation and student learning outcomes.

Abduh ar-Rajihy stated that the problem of learning *nahwu* does not lie in the *nahwu* material but rather in the learning method. He noted that the *nahwu* learning method was not suited to the situation and conditions of existing schools and universities (Munajat, 2015). In line with this, al-Khifaji stated that the difficulty of learning *nahwu* does not lie in *nahwu* itself but in the strategies and learning methods used (Abdurrahman, 2016). Huda (2020) states that the teacher's role in the education system as a messenger of educational messages needs to be supported by appropriate methods to ensure the teaching and learning process runs effectively and successfully. Presenting learning material using the correct method will arouse students' enthusiasm and interest in the material.

One *nahwu* learning method that can help students be more active in their learning is the *nahwu* method based on David Ausubel's cognitive theory. David Ausubel is an educational psychologist famous for the theory of meaningful learning (Merrill, 2002). Meaningful learning is the association of new information with relevant concepts in one's cognitive structure. Meaningful learning is learning in which a person can relate the new knowledge he has acquired to previously acquired knowledge. The existence of meaningful learning links between theories, facts, or new situations that are appropriate to the students' cognitive framework. Learning is not only about memorizing subject matter or events; it is also about connecting all the concepts being taught so students will not easily forget. The learning process is easy (Muamanah & Suyadi, 2020).

According to Ausubel, prior knowledge is the factor that most influences student learning. Joao Batista da Silva (2020) argued in his research that students' initial knowledge is insufficient to make learning meaningful. He stated that not all prior knowledge makes learning meaningful; sometimes, prior knowledge becomes an obstacle to learning if the initial knowledge is irrelevant to the new knowledge. Meaningful learning requires two conditions: students must be inclined to engage in meaningful learning, and the material to be studied must be potentially meaningful (Ausubel, 1978).

David Ausubel's learning theory is a cognitive learning theory that prioritizes the learning process rather than the results. Cognitive theory assumes humans build their cognitive abilities through self-motivated actions toward the environment. The cognitive aspect leads to mindset skills, including intellectual simplicity in the form of memory, and skills in overcoming problems, familiarising students with connecting and combining several ideas, perceptions, methods, or procedures learned to solve these problems. Through students' experiences, it is hoped that they can analyze and solve problems they encounter, so that later they will develop overall skills (Hamida et al., 2022).

To apply Ausubel's theory in teaching, you should pay attention to what Ausubel put forward in his book "Educational Psychology: A Cognitive View". The statement reads: "The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly" (Ausubel, 1968). Ausubel's statement is the core of his learning theory. For meaningful learning to occur, new concepts or information must be linked to existing concepts in students' cognitive structures (Dahar, 2011).

According to David Ausubel, meaningful learning can be achieved by fulfilling four main principles (Dahar, 2011), namely: (1) advanced organizer, (2) progressive differentiation, (3) superordinate learning, and (4) integrative adjustment. Each principle is a framework that helps teachers connect new knowledge with students' existing cognitive structures (Rahmah, 2013).

A. Advanced Organizer

An Advanced organizer is a framework of fundamental concepts to be learned, related to existing cognitive structures. The advanced organizer directs students to the material they will learn and helps them recall related information to embed new knowledge (Dahar, 2011). This character is used in Arabic instruction to improve students' learning and understanding of new material (Aufa, 2018). In the context of *nahwu* learning at Madrasah Diniyah Nurul Huda Malang, this principle is implemented through introductory questions and schema activation activities. For example, before explaining *jumlah ismiyyah* (nominal sentences), the teacher asks students to recall examples of *mubtada'* and *khabar* from previous lessons. This step helps students relate old concepts to the new topic, enabling smoother comprehension and retention.

B. Progressive Differentiation

Progressive differentiation is a form of instructional delivery in which general material is first delivered to students, followed by special material (Muamanah & Suyadi, 2020). Drafting concepts involves teaching the most inclusive concepts, then less inclusive concepts, and finally the most specific things (Sulianto, 2014). In *nahwu* classes, the teacher first introduces broad concepts, such as the types of sentences (*jumlah ismiyyah* and *jumlah fi'liyyah*), before moving on to specific grammatical elements, such as *fa'il*, *maf'ulbih*, and *jar majrur*. This sequencing helps students grasp the overall structure of Arabic grammar before delving into detailed applications, thereby minimizing confusion and cognitive overload.

C. Superordinate Learning

Superordinate learning is a learning concept carried out when the material to be studied is a continuation of previously studied material, so students already know previous lessons (Muamanah & Suyadi, 2020). This principle is realized in the *nahwu* learning process when students revisit earlier concepts to form connections with more advanced material. For instance, after mastering the rules of *fi'il madhi* (past tense verbs), students are guided to compare these

structures with *fi'il mudhari* (present tense) to see the relationship between the two. This helps strengthen conceptual integration and promotes continuity between lessons.

D. Integrative Adjustment

Integrative adjustment is the preparation of learning concepts to create a lawyered knowledge arrangement. To achieve integrative adjustment, the subject matter should be well structured, allowing conceptual hierarchies to move up and down as information is presented (Sulianto, 2014). In *nahwu* learning, teachers apply this by designing mind maps or visual charts that display links between grammar topics such as sentence components, *i'rab* (case endings), and syntactic functions. This visual integration allows students to navigate related grammatical rules more easily, fostering a comprehensive, interconnected understanding rather than fragmented memorization.

According to Ausubel and Novak, the use of meaningful learning theory has three advantages (Novak, 2008), namely:

A. Information that students learn meaningfully will be remembered longer,
B. New information received can strengthen concepts that have already been mastered, making it easier to teach similar lessons in subsequent teaching and learning.
C. Information that has been forgotten can leave a mark, making it easier to study similar material.

Although several previous studies have explored the application of Ausubel's cognitive theory in Arabic language learning, most have not comprehensively tested its empirical impact on *nahwu* learning outcomes. For instance, Silmi Maulidya (2022) investigated the effectiveness of Ausubel's cognitive theory at MTs Shirotul Fuqoha' Malang using the Mann-Whitney and N-Gain tests, focusing primarily on measuring improvement levels without analyzing pre- and post-learning differences. Romi Mahendra (2021) examined the development of table-based media and concept maps at Anwarul Huda Islamic Boarding School. Still, his study emphasized media design rather than the theoretical influence of Ausubel's principles on cognitive outcomes. Similarly, Kurnia Istita'ah (2019) created game-based learning media grounded in cognitive theory. However, her research remained limited to product development without testing the actual learning effect in a classroom context—meanwhile, Moh. Noval Rikza (2018) and Zam Zam Rasidi (2017) focused on deductive teaching methods in *nahwu* learning, highlighting procedural aspects rather than conceptual cognitive integration.

Several similarities can be identified from these studies: all aimed to improve students' *nahwu* learning performance and were inspired by cognitive learning perspectives. However, the differences lie in methodological and analytical depth—neither directly applied Ausubel's meaningful learning theory as the core instructional approach nor evaluated its quantitative effect on students' learning outcomes through the Wilcoxon test, which explicitly measures pre- and post-intervention performance in small samples.

Therefore, the research gap addressed in this study lies in its focus on measuring the impact of Ausubel's cognitive theory on *nahwu* learning outcomes through an empirical, statistical approach. Unlike previous conceptual or media-oriented studies, this study provides an evidence-based contribution by testing how Ausubel's principles (advanced organizer, progressive differentiation, superordinate learning, and integrative adjustment) affect students' comprehension and retention of Arabic grammatical concepts.

In this way, the current research's position stands as both a theoretical reinforcement and a methodological advancement: theoretically, it deepens the understanding of how meaningful learning enhances cognitive connections in Arabic grammar instruction; methodologically, it demonstrates the utility of the Wilcoxon test as a robust tool for measuring learning improvement in small-group educational experiments.

Given the limitations of *nahwu* learning, which still rely on grammatical and translation methods that often lead to passive learning and low student engagement, applying David Ausubel's cognitive theory offers an alternative that can make *nahwu* learning more meaningful and effective. This theory emphasizes the connection between new and existing knowledge, enabling students to build a more profound understanding rather than merely memorize grammatical rules.

The urgency of this study lies in the need to improve Arabic grammar (*nahwu*) learning outcomes through cognitive-based learning innovations that foster active participation and conceptual comprehension among students of traditional Islamic institutions such as Madrasah Diniyah. This is particularly important because many students at this level struggle to apply grammatical concepts in reading and interpreting Arabic texts, despite years of formal instruction.

Therefore, this study aims to answer the following research question: "To what extent does the application of David Ausubel's cognitive theory affect students' *nahwu* learning outcomes at Madrasah Diniyah Nurul Huda Malang?". In addressing this question, the study seeks to provide new insights into how meaningful learning principles — specifically advanced organizer, progressive differentiation, superordinate learning, and integrative adjustment — can be effectively implemented in *nahwu* instruction. The findings are expected to contribute both theoretically, by reinforcing the relevance of Ausubel's theory in Arabic grammar education, and practically, by offering an applicable pedagogical model that can enhance students' cognitive engagement and retention of *nahwu* concepts.

## Method

This research is classified as quantitative because it involves collecting and analyzing numerical data using statistical or mathematical formulas. Quantitative data in this study are expressed as numerical values or qualitative data converted into numerical form (Kurniawan, 2018). This approach aims to objectively and empirically measure the effect of applying David Ausubel's cognitive theory on students' *nahwu* learning outcomes at Madrasah Diniyah Nurul Huda Malang.

This study employed an experimental research design in which subjects received a specific treatment and its effects were systematically measured. The design was a pre-experimental pre-test and post-test with one group (one-group pre-test post-test design). In this design, students were given a pre-test to measure their initial *nahwu* competence before implementing Ausubel's cognitive theory, followed by a post-test after the treatment to determine improvement. The mean scores from both tests were then compared using the Wilcoxon Signed-Rank Test (Ainin, 2019).

The following Table is related to the pre-experimental pre-test and post-test research models with one group, namely:

Table 1. Pre-test and post-test design with one group

| Subject | Pre-test | Treatment | Post-test |
|---|---|---|---|
| R | 0 | X | 0 |

This study's subjects were 20 students of Class 1 *Wustha* at Madrasah Diniyah Nurul Huda Malang in the academic year 2022/2023. The entire Class 1 *Wustha* population was considered the research population, and the sample was selected using a purposive sampling technique. The selection criteria were based on students' readiness and prior exposure to *nahwu* learning at the awaliyah level, ensuring that participants possessed comparable initial knowledge.

The variables in this research consisted of two main components: the independent variable, the application of David Ausubel's cognitive theory, and the dependent variable, namely students' *nahwu* learning outcomes. Data collection was conducted using test instruments consisting of pre-test and post-test multiple-choice questions. Each test consisted of 25 items with four answer choices (a, b, c, and d), and each correct answer was scored proportionally to reach an ideal total score of 100.

The development of the test instrument referred to *nahwu* learning indicators, which included (1) understanding grammatical rules, (2) applying *nahwu* principles in sentence construction, (3) analyzing *i'rab* and syntactic positions, and (4) determining accurate grammatical functions. The validity of the test instrument was ensured through expert validation by three assessors: two Arabic education lecturers and one senior *nahwu* instructor, who reviewed the test items for relevance, clarity, and representativeness. Meanwhile, reliability testing using Cronbach's Alpha yielded a coefficient of 0.82, indicating high internal consistency.

The research procedure was carried out through three main stages. The first stage was the pre-test, which assessed students' initial understanding of *nahwu*. The second stage was the treatment process, during which the researcher implemented David Ausubel's meaningful learning approach across four sessions. During this phase, learning activities were designed according to Ausubel's four core principles (advanced organizer, progressive differentiation, superordinate learning, and integrative adjustment) through concept mapping, guided explanation, and gradual elaboration of rules. The third stage was the post-test, which aimed to measure students' improvement in *nahwu* competence after the learning intervention.

To uphold ethical standards, the researcher obtained the Principal's official permission for the study and informed consent from students' parents or guardians. All participants were briefed about the purpose and procedure of the study, assured of confidentiality, and informed that their participation was voluntary. No personal identifying data was disclosed, and all collected information was used solely for academic purposes.

The data were analyzed using nonparametric statistical methods due to the relatively small sample size ($n < 30$). The Wilcoxon Signed-Rank Test was selected because it is suitable for analyzing paired data that do not meet the normality assumption (Arifin, 2017). This test compares two related samples — here, the pre-test and post-test scores — to determine whether the observed differences are statistically significant. According to the methodological literature, the Wilcoxon test is appropriate for ordinal or interval data with small sample sizes. It is widely used in educational research when data exhibit abnormal distributions (Sugiyono, 2020).

Data analysis was conducted using SPSS version 26.00 for Windows. The results of the Wilcoxon test were interpreted using a significance threshold of $p < 0.05$. If the significance value was less than 0.05, it indicated a statistically significant effect of applying David Ausubel's cognitive theory on students' *nahwu* learning outcomes. Conversely, if the value exceeded 0.05, the treatment was considered to have no significant effect.

## Results and Discussion

### Validity and Reliability of Pre-test and Post-test Questions

Before conducting the research, the researcher tested the instrument to determine its validity and reliability, and then distributed it to the research subjects. The validity used in this study was content, assessed through expert judgment. This means that Arabic language education experts examined the instrument items to ensure their suitability for students' learning objectives, instructional materials, and cognitive level. The validators assessed whether each question accurately represented the indicators of *nahwu* learning outcomes, including comprehension of grammatical rules, application of syntax, and analysis of sentence structure.

The validity test was then conducted statistically using SPSS 26.00 for Windows. The instrument was declared valid if the correlation coefficient (r-count) obtained was greater than the r-table value at the 5% significance level (Widoyoko, 2013). The researcher tested the validity of 25 pre-test and post-test questions on 30 respondents (N = 30). At the 5% significance level, the r-table value was 0.361. The validity test results showed that all 25 items had r-count values greater than the r-table value, indicating that all items were valid and could be used as appropriate measurement tools in this research.

Next, the reliability test was conducted using Cronbach's alpha in SPSS 26.00 for Windows. The reliability test was intended to determine the instrument's consistency in measuring students' learning outcomes. The average Cronbach's Alpha value obtained in the pre-test was 0.753, while the average post-test reliability value was 0.732. Sudijono (2006) states that an instrument is reliable if its Cronbach's alpha exceeds 0.70. This cut-off point indicates that the instrument items have sufficient internal consistency to be used repeatedly with consistent results.

Therefore, based on the analysis results, the reliability coefficients obtained in both the pre-test and post-test were above the 0.70 threshold (0.753 and 0.732). This shows that the instrument used in this study was reliable and produced consistent measurement results. Thus, it can be concluded that the 25-question items used as instruments for both the pre-test and post-test met the requirements of validity and reliability, ensuring that the data collected were accurate and dependable for analyzing the effect of applying David Ausubel's cognitive theory on *nahwu* learning outcomes.

### Pre-test and Post-test Scores

Researchers in this study will present and analyze data on the effect of applying David Ausubel's cognitive theory on the learning outcomes of *nahwu* for class 1 *Wustha* students at Madrasah Diniyah Nurul Huda Malang for the academic year 2022/2023. The following is a Table related to pre-test scores and post-test scores that have been tested on 20 students in class 1, *Wustha*:

Table 2. Pre-test and Post-test Scores

| No. | Subject | Pre-test Score | Post-test Score |
|---|---|---|---|
| **1** | 1 | 76 | 92 |
| **2** | 2 | 84 | 92 |
| **3** | 3 | 24 | 64 |
| **4** | 4 | 76 | 80 |
| **5** | 5 | 52 | 72 |
| **6** | 6 | 88 | 88 |
| **7** | 7 | 32 | 64 |

| | | | |
|---|---|---|---|
| **8** | 8 | 84 | 92 |
| **9** | 9 | 84 | 92 |
| **10** | 10 | 92 | 96 |
| **11** | 11 | 28 | 68 |
| **12** | 12 | 96 | 96 |
| **13** | 13 | 36 | 88 |
| **14** | 14 | 76 | 80 |
| **15** | 15 | 44 | 56 |
| **16** | 16 | 32 | 60 |
| **17** | 17 | 60 | 72 |
| **18** | 18 | 92 | 100 |
| **19** | 19 | 68 | 76 |
| **20** | 20 | 84 | 88 |
| | **Total** | **1308** | **1616** |
| | **Average** | **65,40** | **80,8** |

From Table 2 above, it can be concluded that the *nahwu* learning outcomes of class 1 *Wustha* students have increased. The results of the pre-test and post-test values will be translated by statistical tests as follows :

Table 3. Initial Student Ability Score (Pre-test)

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| **Pretest** | 20 | 24 | 96 | 65,40 | 24,564 |
| **Valid N (listwise)** | 20 | | | | |

Based on Table 3 above, the initial ability score (pre-test) of class 1 *Wustha* before being given treatment shows that the lowest score (minimum) is 24, the highest score (maximum) is 96, and the average value (mean) is 65,40.

Table 4. Student Ability Value after being given Treatment (Post-test)

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| **Pretest** | 20 | 56 | 100 | 80,80 | 13,462 |
| **Valid N (listwise)** | 20 | | | | |

Table 4 above shows the students' ability scores (post-test) of class 1 *Wustha* after treatment: the lowest score (minimum) is 56, the highest score (maximum) is 100, and the average value (mean) is 80,80.

Table 5. Comparison between Pre-test and Post-test

| No. | Criteria | Score | Pre-test | | Post-test | |
|---|---|---|---|---|---|---|
| | | | Number of students | Percentage | Number of students | Percentage |
| 1. | Perfect | 85 – 100 | 4 | 20% | 10 | 50% |
| 2. | Very good | 70 – 84 | 7 | 35% | 5 | 25% |
| 3. | Good | 55 – 69 | 2 | 10% | 5 | 25% |
| 4. | Accepted | 40 – 54 | 2 | 10% | 0 | - |
| 5. | Weak | 0 – 39 | 5 | 25% | 0 | - |
| **Total** | | | **20** | **100%** | **20** | **100%** |

This study used David Ausubel's cognitive theory as the treatment. As shown in Table 5, the comparison between the pre-test and post-test results indicates that of the 20 students who took the pre-test, 4 students met the criteria perfectly. The percentage is 20%, seven students whose criteria are perfect. Their percentages are: 35% for two students whose criteria are reasonable; 10% for two students whose criteria are accepted; and 25% for five students whose criteria are weak. Then the post-test results of 20 students showed ten students whose criteria were perfect, and the percentage was 50%, with five being perfect. Their percentage was 25%; five students whose criteria were good, and no students whose grades met the requirements, acceptable or weak.

## Shapiro Wilk Normality Test

After conducting research and obtaining pre-test and post-test data, students in class 1 *Wustha* at Madrasah Diniyah Nurul Huda Malang. The researcher conducted a normality test to determine whether the data were normal or not, aiming to use the normality test results as a basis for making calculation decisions to find the study's final results. The normality test used by researchers is the Shapiro-Wilk normality test because the sample used by researchers is a small sample of 20.

The Shapiro-Wilk Normality Test is used to determine whether the data are typically distributed. In testing, data is said to be generally distributed if :

If the sig value is greater than > 0.05, Ho is accepted and Ha is rejected, then the data is usually distributed.

The sig value is less than <0.05, Ho is rejected, and Ha is accepted, so the data is not normally distributed.

Data from the Shapiro-Wilk normality test using the SPSS 26.00 for Windows application program for normal distribution or not can be seen in the following Table :

Table 6. Shapiro Wilk Normality Test Results

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistics | Df | Sig. | Statistics | Df | Sig. |
| **Pretest** | .217 | 20 | .014 | .879 | 20 | .017 |
| **Posttest** | .204 | 20 | .029 | .926 | 20 | .132 |

a. Liliefors Significance Correction

Table 6 above shows that the pre-test value data has a significance value of 0.017, which is less than 0.05 (<0.05), indicating the data are not normally distributed. On the other hand, the post-test value has a significance value of 0.132, where 0.132 is more than 0.05 (> 0.05), which means the data is distributed normally. The data in Table 6 above do not meet the prerequisite normality assumption for the analysis, so it does not meet the normality test requirement. Therefore, a non-parametric statistical test is used to measure the effect.

## Wilcoxon Test

The non-parametric statistical test used in this study is the Wilcoxon test. The Wilcoxon test was used to determine whether applying David Ausubel's cognitive theory affected the *nahwu* learning outcomes of class 1 *Wustha* students before and after treatment. Calculation of these statistics is assisted by using the SPSS 26.00 application for Windows. The Wilcoxon test in this study was applied to address the formulation: "Does the application of David Ausubel's cognitive theory affect the *nahwu* learning outcomes of class 1 *Wustha* students?" To address the problem formulation, the Wilcoxon test was performed on the students' pre-test and post-test scores.

Table 7. Results of the Ranks Wilcoxon Test Pre-test and Post-test

| | | N | Mean Rank | Sum of Ranks |
|---|---|---|---|---|
| Post-test – Pre-test | Negative Ranks | 0[a] | .00 | .00 |
| | Positive Ranks | 18[b] | 9.50 | 171.00 |
| | Ties | 2[c] | | |
| | Total | 20 | | |

a. Post-test < Pre-test
b. Post-test > Pre-test
c. Post-test = Pre-test

Table 7 above shows that the Negative Ranks between *nahwu* learning outcomes for the pre-test and post-test are 0, in the values of N, Mean Rank, and Sum of Ranks. This zero value indicates no decrease or reduction from the pre-test to the post-test value. Then, the Positive Ranks between *nahwu* learning outcomes for the pre-test and post-test are 18 positive data (N), meaning that 18 students experienced an increase in *nahwu* learning outcomes from pre-test to post-test scores. The Mean Rank (average increase) is 9.50, while the Sum of Ranks (the number of positive rankings) is 171.00. Ties are the similarity of the pre-test and post-test scores. The Ties value in Table 7 above is 2, so two students have identical scores between the pre-test and post-test.

Table 8. Results of the Wilcoxon Test Pretest and Posttest

**Test Statistics[a]**

| | Post-test – Pre-test |
|---|---|
| Z | -3,738[b] |
| Asymp. Sig. (2-tailed) | ,000 |

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks

The basis for decision-making in the Wilcoxon test is as follows :

Asymp.Sig value. (2-tailed) is less than < 0.05, then Ha is accepted.

Asymp.Sig value. (2-tailed) is greater than > 0.05, then Ha is rejected.

The Z value obtained based on the output results in Table 8 is -3.738 with Asymp. Sig. (2-tailed) 0.000, which shows that the Asymp. Sig. (2-tailed) 0.000 is less than <0.05, it can be concluded that "Ha is accepted". This means there is a difference between *nahwu* learning outcomes for the pre-test and post-test, so it can be concluded that "there is an effect of using David Ausubel's cognitive theory on *nahwu* learning outcomes of class 1 *Wustha* students".

The results of the hypothesis test on the *nahwu* learning outcomes of class 1 *Wustha* Madrasah Diniyah Nurul Huda Malang showed that there was a significant difference between students' scores before (pre-test) and after treatment (post-test) when applying David Ausubel's cognitive theory. Table 2 shows that students in class 1 *Wustha* experienced an increase after the learning process. The average post-test score is higher than the pre-test score. This is supported by the results of statistical tests with an average pre-test score of 65.40 and an average post-test score of 80.80. This shows that *nahwu* learning based on David Ausubel's cognitive theory affects students' *nahwu* learning outcomes.

The effect on *nahwu* learning outcomes of applying David Ausubel's cognitive theory is that the learning is designed to focus on student activity in the learning process, making it more active and less dull. The level of student engagement in learning activities, as outlined in David Ausubel's cognitive theory, can be assessed through discussions and group work on the teacher-provided analytical exercise sheets. David Ausubel's cognitive theory is applied through a student-centered approach, meaningful learning strategies, and cross-group discussion and question-and-answer

methods. The media or learning tools used include blackboards, writing tools (markers and erasers), practice sheets, and the Google Classroom application. The Google Classroom application is used as a medium for sharing materials and learning implementation plans, and as a forum for discussion between fellow students and teachers, carried out outside the classroom, to discuss related learning materials that will be taught or have been taught. The learning resource used in this research is the book Imrithi by Syekh Syarafuddin Yahya al-Imrithi.

The meaningfulness of the subject matter depends on two factors: the material must have logical significance, and the relevant ideas must be contained in the student's cognitive structure. Material that has logical importance is nonarbitrary and substantive. Nonarbitrary material is material that is similar to what is already known. For example, students who have studied the concepts of 'amil-'amil that are included in *mubtada'* and *khabar* can include these concepts nonarbitrarily into a broader classification, namely the terms *kaana wa akhwatuha*, *inna wa akhwatuha*, and *zhanna wa akhwatuha*. The material must be substantive, meaning it can be stated in various ways without changing its meaning. For example, the practice of "*kaana wa akhwatuha* is *me-rafa'kan isim dan me-nashabkan khabar*" which can be changed to "*me-rafa'kan isim* as the *isim* of the *kaana* and *me-nashabkan khabar* as the *khabar* of the *kaana*". By adding words, the concept's meaning does not change. The second aspect of potential meaningfulness is that there must be relevant ideas in students' cognitive structures. In this case, researchers focus on students' experiences, levels of development, intelligence, and age (Rego et al., 2023). Therefore, for meaningful learning to occur, the subject matter must be logically meaningful. Students must aim to incorporate *nahwu* material into their cognitive structure. In the student's mental structure, elements must be suitable for associating or connecting new material, nonarbitrary, and substantive. The material is learned rote if one of these components is absent (Rosser, 1984).

*Nahwu* Learning, based on David Ausubel's cognitive theory, is implemented through four main principles: advanced organizer, progressive differentiation, superordinate learning, and integrative adjustment (Dahar, 2011). These four principles serve as a foundation for developing meaningful learning experiences that help students connect new grammatical concepts to prior knowledge.

In the first stage, the advanced organizer, the teacher begins by motivating students to participate actively in the learning process. The lesson starts with a brief aperception session, in which the teacher links previously learned materials, such as basic *i'rab* concepts and sentence structures, with new content to be introduced, such as *jumlah ismiyyah* or *jumlah fi'liyyah*. This connection is reinforced through short question and answer activities that stimulate students' recall of previous lessons. The teacher then explains the learning objectives and presents a concept map or diagram on the whiteboard that visually outlines the relationships between the old and new concepts. This helps students prepare their cognitive structures to receive and organize new information systematically.

The second stage, progressive differentiation, involves presenting learning materials from general to specific. The teacher explains the general rules of *nahwu*, for example, the classification of *mubtada'* and *khabar*, then gradually moves to particular examples drawn from classical Arabic texts or verses from the Qur'an. Using tables and structured diagrams helps students visualize relationships between grammatical elements. During this stage, students can ask questions about any unclear material. To encourage active learning, peer explanation is used, with students attempting to answer their classmates' questions before the teacher provides clarification. Afterward, the class is divided into small groups of two to three students. Each group receives exercise sheets with interrelated

analysis tasks requiring students to identify syntactic functions and grammatical markers. This activity not only deepens understanding but also fosters collaboration and critical thinking.

In the third stage, superordinate learning, students explore higher-level connections by analyzing *nahwu* rules in real linguistic contexts. They are instructed to search for and interpret grammatical patterns in selected verses of the Qur'an al-Karim or sentences from classical Arabic texts that reflect the principles studied in class. Through this activity, students realize that *nahwu* rules are not isolated concepts but are interrelated systems that form the foundation of Arabic sentence structure. This stage enables learners to integrate new knowledge with the broader context of Arabic linguistic comprehension, supporting the meaningful learning process emphasized by Ausubel.

Finally, in the fourth stage, integrative adjustment, students consolidate their understanding by organizing the concepts they have learned into a coherent, hierarchical knowledge framework. Each group discusses the results of their analysis, and one representative student presents a summary of their group's findings to the class. The teacher then facilitates reflection by highlighting key relationships between concepts and providing feedback. The use of visual media, such as digital slides or mind maps, further reinforces the integration of ideas. By the end of the lesson, students collaboratively construct a concise summary that captures the core principles of *nahwu* discussed that day, expressed clearly and accurately.

Through these four stages, the application of Ausubel's cognitive theory successfully transforms *nahwu* learning from a teacher-centred and memorisation-based activity into a more interactive, conceptual, and student-centred process. Students are encouraged to connect new grammatical insights with their existing knowledge base, enabling a deeper understanding and longer-term retention of the material. This aligns with Ausubel's emphasis that "the most important single factor influencing learning is what the learner already knows" (Dahar, 2011). Integrating structured learning media, collaborative activities, and cocontextualized exercises demonstrates that meaningful learning can enhance students' cognitive engagement and improve their *nahwu* learning outcomes.

In the world of education, learning outcomes are a very important factor, because the learning outcomes achieved by students serve as a tool to measure the extent to which students have mastered the material taught by the teacher. Many factors cause students' failure to achieve learning outcomes in *nahwu* subjects. These factors can be internal or external for students. Internal factors include students' intelligence, attitudes, talents, interests, and motivation. At the same time, two external factors are the teacher's role and the learning methods used. As a learning manager, the teacher must be able to organize exploration of students' potential to improve student learning outcomes (Mikrayanti et al., 2017). Based on the results of the hypothesis testing above, it can be seen that student learning outcomes increased from before (pre-test) to after treatment (post-test) when applying David Ausubel's cognitive theory. This is evidenced by the results of the Wilcoxon test, where the Z value obtained is -3.738 with Asymp. Sig. (2-tailed) 0.000, which shows that the Asymp. Sig. (2-tailed) 0.000 is less than <0.05, it can be concluded that "Ha is accepted". This means that there is a difference between *nahwu* learning outcomes for the pre-test and post-test, so it can be concluded that "there is an effect of the application of David Ausubel's cognitive theory on *nahwu* learning outcomes in class 1 *Wustha* students".

Previous research has consistently shown that applying David Ausubel's cognitive theory as a learning method can significantly improve student learning outcomes. For instance, Amran Yahya (2022) found that students' mathematics learning outcomes improved significantly when taught

using a meaningful learning design model, as indicated by the hypothesis test results, which were significant at the. level. This suggests that meaningful learning enables students to integrate new mathematical concepts with their prior knowledge, in line with Ausubel's advanced organizer principle, which emphasizes activating existing cognitive structures before introducing new information. Previous research has consistently shown that applying David Ausubel's cognitive theory as a learning method can significantly improve student learning outcomes.

Similarly, Eka Mustika Dewi et al. (2022) discovered that implementing an advanced organizer learning model based on mind mapping significantly improved physics learning outcomes among SMA Negeri 1 Kediri students during the 2022/2023 academic year. The results confirmed a substantial improvement in students' ability to organize and relate new knowledge to existing frameworks. This finding aligns with the progressive differentiation principle, where general concepts are introduced and refined into more specific knowledge, facilitating meaningful connections between old and new ideas.

A similar pattern was reported by Nur Silvia (2021), whose study demonstrated the effectiveness of the meaningful interactional design model in improving mathematics learning outcomes among students of SMAS Al-Hikmah Medan. The hypothesis test yielded $t_{count} = 6.000 > t_{table} = 2.000$, indicating that when learning is structured meaningfully, students are better able to internalize and apply conceptual understanding. This is further supported by Nurdalilah and Haryati Ahda Nst (2019), who found that the advanced organizer learning model significantly enhanced mathematics learning outcomes in the algebraic structure course, as evidenced by $t_{count} = 2.694 > t_{table} = 2.03$and a significance value of $0.000 < 0.05$.

Further evidence was presented by Mikrayanti et al. (2017), who concluded that a mind mapping–based advanced organizer model positively affected physics learning outcomes at SMA Negeri 6 Palu, supported by $t_{count} = 4.28 > t_{table} = 2.01$at a 0.05 significance level. Likewise, Donas Ahmad Najib and Elhefni (2016) confirmed that meaningful learning significantly improved the learning outcomes of class III students at MI Ahliyah IV Palembang, where $t_{count} = 4.2 > t_{table} = 2.68(df = 50, p < 0.05)$. These consistent findings affirm that when instructional activities are structured using Ausubel's meaningful learning framework—specifically through *advance organizers*, *progressive differentiation*, and *integrative adjustment*—students are more capable of connecting, organizing, and retaining knowledge effectively.

In line with these previous studies, the current research at Madrasah Diniyah Nurul Huda Malang also demonstrated a significant improvement in *nahwu* learning outcomes after the application of Ausubel's cognitive theory, as evidenced by the Wilcoxon test result $Z = -3.738, p < 0.05$.This improvement reflects students' ability to relate newly learned grammatical structures to previously understood linguistic concepts, fulfilling the essence of meaningful learning. Through the systematic use of advanced organizers and concept-based scaffolding, students were able to grasp complex *nahwu* rules more effectively and integrate them within their existing cognitive frameworks, ultimately enhancing both understanding and long-term retention of Arabic grammar concepts.

## Conclusion

Based on the results of research conducted at *Madrasah Diniyah Nurul Huda Malang* and the findings of the Wilcoxon test on the effect of applying David Ausubel's cognitive theory to the *nahwu* learning outcomes of class 1 *Wustha* students, it can be concluded that there is a significant

and positive influence of Ausubel's theory on improving students' learning outcomes. The Wilcoxon test result $Z = -3.738, Asymp.Sig.(2-tailed) = 0.000 < 0.05$indicates that the post-test scores were significantly higher than the pre-test scores, reflecting a meaningful increase in students' mastery of *nahwu* concepts after the implementation of Ausubel's meaningful learning model. The improvement suggests that students were able to integrate new grammatical structures with their prior linguistic knowledge, which is consistent with Ausubel's principle that meaningful learning occurs when new information is anchored to existing cognitive structures.

Theoretically, these findings support Ausubel's claim that prior knowledge is a key determinant of cognitive growth. Applying advanced organizer, progressive differentiation, and integrative adjustment in *nahwu* instruction helped students connect abstract grammatical concepts with practical linguistic examples, facilitating long-term retention and deeper understanding. Pedagogically, this study highlights that meaningful learning strategies can serve as a valuable framework for *nahwu* teachers in madrasah diniyahs or similar Arabic-language learning environments. Teachers can foster a more interactive, conceptually grounded, and student-centered learning process by systematically activating students' existing knowledge and linking it to new information.

In practical terms, implementing Ausubel's cognitive theory encourages educators to redesign Arabic grammar learning into structured, concept-driven lessons that go beyond rote memorization. However, this approach also requires sufficient time allocation, effective classroom management, and well-prepared instructional materials to ensure the learning process runs efficiently. Future research may explore the long-term retention of *nahwu* concepts learned through Ausubel's model, integrate digital learning tools to support meaningful learning, or compare the comparative effectiveness of Ausubel's theory across different levels of Arabic instruction.

In summary, the results of this study confirm that applying David Ausubel's cognitive theory in *nahwu* learning not only improves students' academic outcomes but also provides a scientifically grounded pedagogical approach that can enhance the quality of Arabic language education through meaningful, structured, and cognitively oriented learning experiences.

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