



From Tradition to Transformation: Addressing Challenges and Trends in Arabic Syntax Mastery via Problem-Based Learning

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Abstract

Understanding and mastering Arabic syntax have a significant contribution to comprehending religious sciences, especially the books that use the Arabic language. The teaching method used can influence the enthusiasm, motivation, and outcomes of student learning. The purpose of this research is to determine the effectiveness of the problem-based learning method in improving understanding and mastery of Arabic syntax. In this study, data were collected using a quasi-experimental methodology to analyze it quantitatively, determining the effectiveness of using PBL in Arabic language acquisition for understanding grammar. We analyzed the quantitative data using independent sample t-test statistics. Using the independent sample t-test criteria, a Sig. (2-tailed) value < 0.05 indicates a significant result. The data testing produced a Sig. (2-tailed) value of 0.007, which is less than 0.05. This indicates that the intervention produced significant results. The problem-based learning method is very capable and effective in enhancing knowledge and understanding of Arabic syntax.

Keywords: Educational Challenges, Problem-Based Learning, Arabic Syntax.

Introduction

Despite Arabic's long history of scholarly and liturgical use, and its widespread use in both Islamic and mainstream educational institutions, mastery of syntax remains a significant issue in Arabic language teaching in Indonesia ¹. Some students continue to struggle with mastering complicated sentence patterns in Arabic language education, which can have a substantial impact on their knowledge of contemporary and classical Arabic grammar literature. Traditional learning methods that are inefficient in bridging a deeper understanding of syntax will provide a substantial challenge to Arabic grammar instruction ². Therefore, this study plays a crucial role in proposing innovative methods for enhancing the understanding of Arabic grammar. Problem-based learning (PBL) is one possible technique for learning Arabic that is both relevant and context-based. Students can theoretically understand learning concepts by solving real-world issues, which improves their syntactic skills.

1. Previous Research

Researchers have investigated many Arabic language teachings in Indonesia, focusing on vocabulary development, reading and writing skills, and phonology learning. However, there is currently limited research on problem-based learning as a means of understanding Arabic syntax. ³ research studies examined traditional teaching approaches, including grammar exercises and lectures.

¹ Ali S M Al-Issa, "The Language Planning Situation in the Sultanate of Oman," *Current Issues in Language Planning* 21, no. 4 (2020): 347–414; David Guedj, "Morocco's Colonial Mutation of Arab Jewishness in the 20th Century, the Case of Elie Malka," *British Journal of Middle Eastern Studies* 51, no. 3 (2024): 654–71; Asma Afsaruddin, "The Vocabulary of Revelation: Divine Intent and Self-Disclosure in the Qur'an," *Journal of Qur'anic Studies* 22, no. 1 (2020): 192–215.

² Amani A Aladeemy et al., "Advancements and Challenges in Arabic Sentiment Analysis: A Decade of Methodologies, Applications, and Resource Development," *Heliyon*, 2024; Jezia Zakraoui et al., "Arabic Machine Translation: A Survey with Challenges and Future Directions," *IEEE Access* 9 (2021): 161445–68; Hezi Y Brosh, "Arabic Language-Learning Strategy Preferences among Undergraduate Students," *Studies in Second Language Learning and Teaching* 9, no. 2 (2019): 351–77.

³ Mohamad Zaka Al Farisi et al., "Investigating Arabic Language Teaching Materials Based on Indonesian Folklore: An Ethnographic Study on the Folktale of 'Bandung,'" *Asian Education and Development Studies* 13, no. 2 (2024): 134–49; Subhan Zein et al., "English Language Education in Indonesia: A Review of Research (2011–2019)," *Language Teaching* 53, no. 4 (2020): 491–523; Hanadi Abu Ahmad and David L Share, "Beginning Reading Instruction: Syllables or Phonemes? An Experimental Training Study with Arabic-Speaking Preliterate Preschoolers," *Developmental Psychology*, 2024.

Despite the widespread use of PBL in foreign language learning, there is still limited research on its application in Arabic syntax learning in Indonesia. However, using PBL can provide possibilities for developing a more comprehensive understanding of syntax by resolving contextual issues ⁴. As a result, this study is likely to fill gaps in the existing literature and provide fresh insights into more effective learning strategies.

Arabic grammar, or *nahw*, is a complex but crucial system for understanding and constructing grammatically accurate phrases in Arabic. Many studies demonstrate that students have had substantial difficulties in mastering this feature. Similarly, traditional learning frequently employs memorizing methods and norms, which can reduce learning effectiveness and engagement ⁵. Another study examined the grammatical structure of the Arabic language, which differs greatly from the mother tongue and includes special signals known as *I'rob* ⁶. We can categorize such challenges as ones that stem from a teacher-centered teaching approach, or stem from a deficiency of motivation and pre-existing knowledge.

Despite these findings, various factors can still influence the capacity to master Arabic syntax. Most studies focus on Arabic as a second language without acknowledging or taking into account the fact that dialects might alter learners' ability to understand grammar. In the future, there will be a need for research on

⁴ Valentyna Filimonova, "Problem-Based Learning in Introductory Linguistics," *Language* 96, no. 1 (2020): e1–21; I Nengah Suastika et al., "Application of Multicultural-Based Learning Model Syntax of Social Studies Learning," *Cypriot Journal of Educational Sciences* 16, no. 4 (2021): 1660–79; Ching-Huei Chen, Hsiu-Ting Hung, and Hui-Chin Yeh, "Virtual Reality in Problem-based Learning Contexts: Effects on the Problem-solving Performance, Vocabulary Acquisition and Motivation of English Language Learners," *Journal of Computer Assisted Learning* 37, no. 3 (2021): 851–60.

⁵ Fenio Annansingh, "Mind the Gap: Cognitive Active Learning in Virtual Learning Environment Perception of Instructors and Students," *Education and Information Technologies* 24, no. 6 (2019): 3669–88; Melanie Good, Alexandru Maries, and Chandralekha Singh, "Impact of Traditional or Evidence-Based Active-Engagement Instruction on Introductory Female and Male Students' Attitudes and Approaches to Physics Problem Solving," *Physical Review Physics Education Research* 15, no. 2 (2019): 20129; Mustafa Fidan, "The Effects of Microlearning-Supported Flipped Classroom on Pre-Service Teachers' Learning Performance, Motivation and Engagement," *Education and Information Technologies* 28, no. 10 (2023): 12687–714.

⁶ Ilan Stavans, *Translation as Home: A Multilingual Life* (University of Toronto Press, 2024).

the dialects employed, as well as insights into how to approach more modern difficulties from a psychological standpoint ⁷.

To overcome the limitations of conventional Arabic language education, there has been a recent shift toward modern pedagogical methods. One popular technique is dialectal grammar, which stresses using grammar in conversation rather than correcting grammatical rules ⁸. Today, many learning experiences incorporate technology-based tools like simulators in online grammar and language programs, which are gaining popularity due to their ability to facilitate adaptable and interactive learning experiences. This trend indicates a learning approach that prioritizes teaching tactics. This modern method incorporates a teaching model and uses digital and problem-based learning tools ⁹.

Despite extensive exploration and significant results, this procedure remains in the experimental stage, lacking ongoing review. Furthermore, we typically focus on the instruments used for learning access, ignoring the significant impact of socioeconomic variables and the technology used on learners' ability to support this method. It is crucial to address this constraint by conducting further empirical research and developing new technologies that can provide universal assistance, especially in traditional learning environments.

⁷ Joshua Conrad Jackson et al., "From Text to Thought: How Analyzing Language Can Advance Psychological Science," *Perspectives on Psychological Science* 17, no. 3 (2022): 805–26; Bin Wang et al., "Achieving Effective Remote Working during the COVID-19 Pandemic: A Work Design Perspective," *Applied Psychology* 70, no. 1 (2021): 16–59; Peter D MacIntyre, Tammy Gregersen, and Sarah Mercer, "Setting an Agenda for Positive Psychology in SLA: Theory, Practice, and Research," *The Modern Language Journal* 103, no. 1 (2019): 262–74.

⁸ Julia Snell and Ian Cushing, "'A Lot of Them Write How They Speak': Policy, Pedagogy and the Policing of 'Nonstandard' English," *Literacy* 56, no. 3 (2022): 199–211; Kristin Denham, "Positioning Students as Linguistic and Social Experts: Teaching Grammar and Linguistics in the United States," *L1-Educational Studies in Language and Literature*, 2020, 1–16; Ali Mohammed Saleh Al-Hamzi et al., "Frequent Linguistic Errors in the Writing of Yemeni EFL Arabic-Speaking Learners," *Studies in English Language and Education* 10, no. 1 (2023): 350–68.

⁹ Daniel Bumblauskas and Nick Vyas, "The Convergence of Online Teaching and Problem Based Learning Modules amid the Covid-19 Pandemic," *Electronic Journal of E-Learning* 19, no. 3 (2021): pp147-158; Hafizah Mohamad Hs Bollah and Haslinda Hassan, "Creating Meaningful Learning Experiences with Active, Fun, and Technology Elements in the Problem-Based Learning Approach and Its Implications," *Malaysian Journal of Learning and Instruction* 19, no. 1 (2022): 147–81; Hao-En Chueh and Chang-Yi Kao, "Exploring the Impact of Integrating Problem Based Learning and Agile in the Classroom on Enhancing Professional Competence," *Heliyon* 10, no. 3 (2024).

Problem-based learning (PBL) is a learning strategy that puts students at the center of the learning process by having them solve issues and find solutions based on real-life circumstances, allowing them to broaden their knowledge and think critically ¹⁰. In the study of Arabic syntax, PBL encourages students to analyze Arabic grammatical principles using real-life examples. Faced with such problems, pupils become more engaged and get a deeper understanding of grammar. Problem-based learning is a teaching paradigm that differs from traditional education, which typically places the teacher at the center of learning and frequently emphasizes rote memorization. At the same time, problem-based learning employs collaborative learning strategies, such as student debates or activities, to solve difficulties linked to Arabic syntax and identify solutions ¹¹.

Research on the application of problem-based learning in Arabic language teaching is scarce, despite its perceived effectiveness in education. The majority of research in the field of scientific knowledge focuses solely on problem-based learning, so attention to the application of language learning remains limited. PBL also faces practical problems in Arabic grammatical education, such as the necessity for professional and trained facilitators and adequate learning resources ¹². Therefore, we must use studies as examples and implement curriculum

¹⁰ Heidi V J Fernandes, "From Student to Tutor: A Journey in Problem-Based Learning," *Currents in Pharmacy Teaching and Learning* 13, no. 12 (2021): 1706–9; Wanjun Yang et al., "Application of Problem Based Learning (PBL) and Case Based Learning (CBL) in the Teaching of International Classification of Diseases Encoding," *Scientific Reports* 13, no. 1 (2023): 15220; Renato Matos Lopes et al., "Principles of Problem-Based Learning for Training and Professional Practice in Ecotoxicology," *Science of The Total Environment* 702 (2020): 134809.

¹¹ Qian Guo et al., "Effects of Problem-Based Learning on EFL Learning: A Systematic Review," *PloS One* 19, no. 12 (2024): e0307819; Salem Saleh Ibnian, "The Impact of Proposed Online Problem-Based Learning Activities on Developing University EFL Students' Expository Essay Writing," *Jordan Journal of Modern Languages & Literatures* 15, no. 1 (2023): 245–66; Yoonjeon Kim et al., "Cognition and Participation: Classroom Reform in the Arab World," *Comparative Education Review* 63, no. 4 (2019): 529–61.

¹² Dua' Ghosheh Wahbeh et al., "The Role of Project-Based Language Learning in Developing Students' Life Skills," *Sustainability* 13, no. 12 (2021): 6518; Sultan A Almelhes and Hussain E Alsaiani, "A Conceptual Framework for Teaching Arabic as a Second Language," *Theory and Practice in Language Studies* 14, no. 7 (2024): 2110–18; Sami Al-Qatawneh, Mohd Elmagzoub Eltahir, and Najeh Rajeh Alsalhi, "The Effect of Blended Learning on the Achievement of HDE Students in the Methods of Teaching Arabic Language Course and Their Attitudes towards Its Use at Ajman University: A Case Study," *Education and Information Technologies* 25, no. 3 (2020): 2101–27.

development initiatives to showcase the effectiveness and relevance of the PBL technique in teaching Arabic grammar ¹³.

This study focuses on the difficulties of studying Arabic grammar, modern learning models, and the possibility of problem-based learning as a novel method. Existing research offers valuable insights, highlighting the need to address numerous gaps and diverse requirements, review modern approaches, and incorporate problem-based learning methods into language instruction and learning. Bridging such gaps transforms Arabic grammar education, allowing students to acquire critical thinking abilities and promote linguistic fluency.

2. Novelty

The innovation in this study is the use of problem-based learning as a solution in the form of a transformation in the teaching of Arabic grammar, or *nahw*, to solve the obstacles and issues that frequently arise in traditional-based learning. Traditional approaches frequently employ rigid rules and place an emphasis on memorization, making them less successful and efficient at engaging students ¹⁴. The use of problem-based learning in this study focuses on students as subjects to encourage them to think critically about their learning, particularly while teaching Arabic grammar, which allows learners to understand and master Arabic syntax more readily.

3. Research Contribution

Thus, this study contributes new ideas by demonstrating how problem-based learning can improve Arabic grammatical competency while also encouraging language skills and critical thinking abilities

¹³ Guo et al., "Effects of Problem-Based Learning on EFL Learning: A Systematic Review"; Kim et al., "Cognition and Participation: Classroom Reform in the Arab World"; Lixuan Sun et al., "Empowering Chinese Undergraduates' Business English Writing: Unveiling the Efficacy of DingTalk-Aided Problem-Based Language Learning during Covid-19 Period," *Education and Information Technologies* 29, no. 1 (2024): 239–71.

¹⁴ Donna Wilson and Marcus Conyers, *Five Big Ideas for Effective Teaching: Connecting Mind, Brain, and Education Research to Classroom Practice* (Teachers College Press, 2020); Douglas Fisher and Nancy Frey, *Better Learning through Structured Teaching: A Framework for the Gradual Release of Responsibility* (ASCD, 2021); Luciana Debs et al., "Students' Perspectives on Different Teaching Methods: Comparing Innovative and Traditional Courses in a Technology Program," *Research in Science & Technological Education* 37, no. 3 (2019): 297–323.

4. Purpose Of This Research

The goal of this study is to investigate how problem-based learning can help students improve their syntax competence. As a result, it is vital to determine the effectiveness of this learning paradigm in teaching pupils to master syntax. Furthermore, this study will examine certain features of problem-based learning in order to propose answers for students struggling to acquire Arabic syntax. This research focuses on students studying at the intermediate and advanced levels, with the aim of enhancing the education sector in the future. This is achieved by utilizing Problem-Based Learning (PBL) as a more engaging, effective, and efficient learning approach, particularly in Arabic language learning, particularly in mastering its syntax.

Based on earlier research, the researcher discovered that the problem-based learning paradigm improved students' understanding significantly. This is because students learn by actively and interactively solving real-world challenges. We expect this study to bring significant insights and contributions to the development of better Arabic language teaching methods, particularly in enhancing students' understanding of Arabic syntax. This study suggests that the PBL model is a more effective alternative than traditional learning models for helping students overcome their difficulties in studying and understanding Arabic syntax ¹⁵. This technique expects students to actively and interactively learn how to handle real-world problems, just as they read complicated Arabic literature in both educational and professional settings.

Method

This study design employs a quantitative technique with a quasi-experimental type, a pseudo-experiment that allows for control over the research variables ¹⁶. The researchers divided the sample into two groups: the experimental

¹⁵ Robyn Lonergan, Therese M Cumming, and Susan C O'Neill, "Exploring the Efficacy of Problem-Based Learning in Diverse Secondary School Classrooms: Characteristics and Goals of Problem-Based Learning," *International Journal of Educational Research* 112 (2022): 101945; Desak Made Anggraeni et al., "Systematic Review of Problem Based Learning Research in Fostering Critical Thinking Skills," *Thinking Skills and Creativity* 49 (2023): 101334.

¹⁶ Azila Munawaroh Putri, Eva Iryani, and Firman Afrian Pratama, "The Influence of Self-Efficacy on Understanding Arabic Syntax in Arabic Language Education Study Program Students, Jambi

class, which utilized the PBL approach, and the control class, which used the traditional way.

We gather data through Arabic syntax comprehension examinations, classroom observations, interviews, and questionnaire completion. We administered the comprehension test to both the experimental and control groups. We administered the comprehension exam twice: once before the intervention and once after it. Then, statistical analysis was performed to measure the efficacy of using the problem-based learning method vs. the traditional method. We collected data through classroom observations, in addition to the pre- and post-test findings, to determine student participation in the learning process. In contrast, we used questionnaire data to assess students' perceptions of the implemented intervention.

We methodically carry out data processing using a variety of approaches, such as editing to ensure data quality, coding to categorize data analysis, entering data, and finally tabulating the results. We then send the coded data into statistical software such as SPSS for further analysis. The first step involves processing the data from the questionnaire and the Arabic syntactic comprehension exam through validity and reliability tests, ensuring that the data used in the study is sufficient and appropriate for future research and data processing. After completing both tests, we will examine the pre-test and post-test scores using a normality test, a prerequisite for the independent sample t-test. Because the sample size is smaller than 50, this study's normality test employs the Shapiro-Wilk method. This study employs normality and homogeneity tests to establish data validity and skill equality between the two groups. We then conduct a statistical analysis using the independent sample t-test to determine if the pre-test and post-test findings of the two groups significantly differ. This guarantees that the conclusions drawn are correct and reliable. To analyze data for the independent sample t-test, use the following formula:

University Class," *Lisanan Arabiya: Jurnal Pendidikan Bahasa Arab* 8, no. 1 (2024): 56–69; 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; Muhamad Bisri Ihwan, Sumari Mawardi, and Ulin Ni'mah, "Pengaruh Penguasaan Ilmu Nahwu Dan Sharaf Terhadap Kemampuan Membaca Kitab Fathul Qarib," *Tadris Al-Arabiyyat: Jurnal Kajian Ilmu Pendidikan Bahasa Arab* 2, no. 1 (2022): 61–77.

$$t_{hitung} = \frac{X_1 - X_2}{\sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Figure 1. Formula for the Independent Samples t-Test

X_i : is the average score/grade of group i .

n_i : is the number of respondents in group i

s_i^2 : is the variance of group i scores.

IBM SPSS version 27 processes the data using that formula. The next stage is data tabulation, which involves presenting the data in tables or diagrams to help people interpret the results.

Results and Discussions

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This research uses a quantitative approach with a quasi-experimental design to measure the effectiveness of the applied intervention. This research uses a quantitative approach with a quasi-experimental design to measure the effectiveness of the applied intervention. The applied intervention is problem-based learning (PBL). Researchers chose this design to compare the results between the experimental group receiving the treatment and the control group not receiving it.

A Likert scale-based questionnaire serves as the main instrument in this research. This questionnaire measures respondents' perceptions, attitudes, or levels of understanding of the variables being studied. The total number of items in the questionnaire is 10 statements using a Likert scale. We manually distributed the questionnaire to the respondents using paper sheets. Next, we obtained data on students' comprehension of Arabic syntax by administering a comprehension test that consisted of 10 short answer questions, each consisting of two. We distributed the test questions to the respondents offline or in person.

Before processing the primary data, the researcher first processes or tests the research instruments, which include questionnaires and Arabic syntax comprehension questions. The validity of the research results will be influenced by the instrument's quality. The tests that are conducted are validity and reliability tests. The purpose of this validity test is to ascertain whether the instrument accurately measures its intended parameters. Here are the results of the validity and reliability tests.

1. The instrument validity test

The number of respondents used in the validity test is 30 respondents, with the *r* table obtained at $df = n-2$, where $30-2 = 28$ and the significance level is 5%, the *r* table correlation coefficient value is 0.361. The validity test was conducted using the IBM SPSS version 27 application, with the criterion that if the calculated $r >$ table *r*, then the question is valid, and if the calculated $r <$ table *r*, then the question is invalid. The number of respondents used in the validity test is 30, with the *r* table obtained at $df = n-2$, where $30-2 = 28$, the significance level is 5%, and the *r* table correlation coefficient value is 0.361. We conducted the validity test using the IBM SPSS version 27 application, applying the criterion that the question is valid if the calculated *r* exceeds table *r*, and invalid if the computed *r* is less than table *r*.

a) Questionnaire Instrument

No	Question ID	R Value	Threshold R table	Result
1	Q 1	0.469	0.361	Valid
2	Q 2	0.431	0.361	Valid
3	Q 3	0.598	0.361	Valid
4	Q 4	0.408	0.361	Valid
5	Q 5	0.686	0.361	Valid
6	Q 6	0.384	0.361	Valid
7	Q 7	0.476	0.361	Valid
8	Q 8	0.441	0.361	Valid
9	Q 9	0.711	0.361	Valid
10	Q 10	0.587	0.361	Valid

Figure 2. Results of the Questionnaire Instrument Validity Test

The table above concludes that the 10 statements in the questionnaire are valid, and we will test the validity of those 10 statements for reliability after conducting the validity test.

b) Instrument for Understanding Arabic Syntax

No	Question ID	R Value	Threshold R table	Result
1	Q 1	0.572	0.361	Valid
2	Q 2	0.485	0.361	Valid
3	Q 3	0.455	0.361	Valid
4	Q 4	0.482	0.361	Valid
5	Q 5	0.5	0.361	Valid
6	Q 6	0.445	0.361	Valid
7	Q 7	0.47	0.361	Valid
8	Q 8	0.659	0.361	Valid
9	Q 9	0.42	0.361	Valid
10	Q 10	0.397	0.361	Valid

Figure 3. Instrument for Understanding Arabic Syntax Validity Test

The table above indicates that all 10 question items' results are valid, and reliability testing will now proceed for these 10 valid items.

2. Reliability Test

The reliability testing of the instrument in the research uses the Cronbach alpha method. This validity test uses SPSS version IBM 27. The reliability test bases its decision-making on the criterion that Cronbach's alpha should be greater than 0.60.

a) Questionnaire Instrument

Reliability Statistics	
Cronbach's Alpha	N of Items
.707	10

Figure 4. Reliability Test of the Questionnaire Instrument

The table above indicates that the questionnaire instrument's reliability test yielded a result of 0.707. Therefore, we declare the 10 statements tested on the students to be reliable.

b) Instrument for Understanding Arabic Syntax

Reliability Statistics	
Cronbach's Alpha	N of Items
.684	10

Figure 5. Reliability Test of the Instrument for Understanding Arabic Syntax

Based on the table above, the reliability test results of the Arabic syntax comprehension instrument are 0.684. Therefore, we declare the 10 items tested on the students to be reliable.

After conducting validity and reliability tests on both research instruments and collecting data, the results above indicate that the instruments used are valid and reliable. Next, we test the pre-test and post-test scores from each group, the experimental group and the control group, to assess the effectiveness of the problem-based learning (PBL) intervention. We obtained the pre-test and post-test scores by working on the following link: [Pre-test Question](#) and [Post-test Question](#).

After collecting the scores from the above tasks, the next step is for the researcher to conduct normality and homogeneity tests. The normality test is conducted to check whether the obtained values are normally distributed or not. Because the sample size is less than 50, the normality test was conducted using the Shapiro-Wilk method. The following data were obtained:

Tests of Normality						
Types of tests	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test Exsperiment	.092	30	.200*	.964	30	.397
Post-tes Exsperiment	.152	30	.076	.949	30	.158
Pre-test Control	.085	30	.200*	.964	30	.385
Post-test Control	.121	30	.200*	.947	30	.142

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 6. Results of the Normality Test

We define the data as normally distributed if the Sig. value is greater than 0.05. We can interpret the above data to show that the pre-test and post-test values for both the experimental and control groups are sequentially 0.397, 0.158, 0.385, and 0.142, all indicating significance values greater than 0.05. Therefore, we can say that the overall data follows a normal distribution.

Once we confirm the normal distribution of the data, we proceed to the homogeneity test. Before applying the intervention, we conduct this homogeneity test to ensure that the experimental group and the control group share the same variance (data diversity) and are homogeneous. This homogeneity test employs the Bartlett test model due to the previously established normality of the data. The test yielded the following data:

Test Results		
Box's M		.002
F	Approx.	.002
	df1	1
	df2	10092.000
	Sig.	.962

Tests null hypothesis of equal population covariance matrices.

Figure 7. Results of the Homogeneity Test

According to the guidelines for the homogeneity test criteria, if the Sig. If the value exceeds 0.05, we consider the variance between groups homogeneous and vice versa. From the data above, with a significance value of 0.962, the experimental and control groups' variance data are homogeneous because it is more significant than 0.05.

To ascertain whether there is a statistically significant difference between the post-test mean results of the two unrelated (independent) groups—the experimental group and the control group—we can perform a parametric test in the form of an independent sample t-test. The following information is presented based on the test results:

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
PBL Result	Eksperimental group	30	78.3000	11.22850	2.05004
	Control group	30	68.8000	14.99057	2.73689

Figure 8. Average post-test results of the two groups

The experimental and control groups' average post-test scores, 78.3 and 68.8, respectively, are displayed in the data above. According to the data, the average post-test scores of the two groups varied by 9.5. The following test results can then be examined to see if the average scores of the two groups differ significantly:

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PBL Result	Equal variances assumed	4.772	.033	2.778	58	.007	9.50000	3.41953	2.65506	16.34494
	Equal variances not assumed			2.778	53.750	.008	9.50000	3.41953	2.64352	16.35648

Figure 9. results of the independent samples t-test

If the Sig. (2-tailed) value is less than 0.05; the independent sample t-test conditions suggest a significant result. The Sig. (2-tailed) value, which is less than 0.05 and indicates a significant outcome from the implemented intervention, can be interpreted as 0.007 based on the data given.

The data above demonstrates the effectiveness of problem-based learning (PBL), which aims to facilitate the mastery of Arabic syntax in education. This is because the above data systematically met the criteria for data testing and obtained significant final results. Therefore, it is evident that problem-based learning enhances the comprehension and proficiency of Arabic syntax.

Conclusion

The application of the problem-based learning (PBL) method in teaching Arabic syntax has proven to have a positive impact, improving students' understanding and mastery of the language. By applying the problem-based learning method, the teaching and learning process can make students more critical, independent, and analytical in understanding the structure of Arabic grammar. The study's results suggest that problem-based learning encourages students to actively participate in the learning process, as it places them at the center of the learning process, thereby improving their ability to apply theory to practice. In addition, PBL helps overcome the challenges in learning Arabic syntax, especially in traditional learning methods that tend to be passive and monotonous.

Based on the research that has been conducted, it is recommended that further research be carried out on the application of PBL over a longer period and a wider scope. Furthermore, in future research, the effectiveness of the PBL method can be compared with other methods as the best alternative in Arabic syntax learning.

The independent sample t-test shows that the experimental group's average post-test score is higher than the control group's. The results are $78.3 > 68.8$ and the two-tailed significance level (Sig. (2-tailed)) is $0.007 < 0.05$. We can interpret this as a significant result of the applied intervention. This research contributes to opening new perspectives in Arabic syntax learning, which is generally

considered difficult, making it easier through more participatory, innovative, and contextual methods.

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