

THE COGNITIVE BENEFITS OF ARABIC DEBATE: IMPLICATIONS FOR VOCABULARY ACQUISITION

Siti Mutmainah

Universitas KH. Mukhtar Syafaat, Indonesia

e-mail: mutmainahtika07@gmail.com

Mahbub

Universitas KH. Mukhtar Syafaat, Indonesia

e-mail: mahbubnawawi@gmail.com

Abstract

Speaking and debating in Arabic has become an enjoyable approach for students to get better in the language, especially as the need to communicate with people worldwide increases. According to social data, many students still struggle with learning and using Arabic. Discussions encourage people to talk and think more critically, according to several research studies. However, fewer studies have examined their role in word learning. It is the first research to quantify the number and types of words people acquire through speech using a quasi-experimental approach. The aim of this research is This study examines whether arguments aid in vocabulary acquisition and enhance students critical thinking, speaking, and vocabulary. The purpose of this study is to find out how conversations affect students communication and critical thinking abilities as well as how effectively they support vocabulary learning. the impact of debate on students communication and critical thinking skills, as well as how effectively debate aids in word learning. We divided forty tenth graders at Satuan Muadalah Ulya into experimental and control groups. To assess their language development, we gave them tests both before and after ten weeks. According to the results, the debate method group learned much more vocabulary than the conventional method group. This study theoretically contributes to the corpus of information about the effectiveness of language learning strategies. These findings provide educators a fresh approach to becoming better in the actual world.

Keywords: Arabic language debate; vocabulary acquisition; language learning; critical thinking skills.

Abstrak

Berbicara dan berdebat dalam bahasa Arab telah menjadi pendekatan yang menyenangkan bagi siswa untuk menjadi lebih baik dalam bahasa, terutama karena kebutuhan untuk berkomunikasi dengan orang-orang di seluruh dunia meningkat. Menurut data sosial, banyak siswa masih berjuang untuk belajar dan menggunakan bahasa Arab. Diskusi mendorong orang untuk berbicara dan berpikir lebih kritis, menurut beberapa studi penelitian. Namun, lebih sedikit penelitian yang meneliti peran mereka dalam pembelajaran kata. Ini adalah penelitian pertama yang mengukur jumlah dan jenis kata yang diperoleh orang melalui pidato menggunakan pendekatan quasi-eksperimental. Tujuan dari penelitian ini adalah penelitian ini meneliti apakah argumen membantu dalam akuisisi kosa kata dan meningkatkan pemikiran kritis siswa, berbicara, dan kosa kata. Tujuan dari penelitian ini adalah untuk mengetahui bagaimana percakapan mempengaruhi komunikasi siswa dan kemampuan berpikir kritis serta seberapa efektif mereka mendukung pembelajaran kosa kata. Dampak debat tentang komunikasi siswa dan keterampilan berpikir kritis, juga Seperti seberapa efektif

perdebatan membantu dalam pembelajaran kata. Kami membagi empat puluh siswa kelas sepuluh di Satuan Muadalah Ulya menjadi kelompok -kelompok eksperimental dan kontrol. Untuk menilai perkembangan bahasa mereka, kami memberi mereka tes sebelum dan sesudah sepuluh minggu. Menurut hasilnya, kelompok metode debat belajar lebih banyak kosa kata daripada kelompok metode konvensional. Studi ini secara teoritis berkontribusi pada kumpulan informasi tentang efektivitas strategi pembelajaran bahasa. Temuan ini memberikan pendidik pendekatan baru untuk menjadi lebih baik di dunia yang sebenarnya.

Kata Kunci: *Debat bahasa Arab; Akuisisi Kosakata; pembelajaran bahasa; keterampilan berpikir kritis.*

INTRODUCTION

As the world gets smaller and smaller, it's becoming more and more important to speak Arabic, especially for Muslim students and workers. Discussions in Arabic have become one of the best ways to meet new people and improve your language, cultural understanding, and critical thinking. This activity not only improves language skills but also improves globally relevant communication skills. Active participation in Arabic language debate activities improves linguistic competence and enriches vocabulary, especially for non-native learners (Al-Khresheh, 2024; Almelhes, 2024; Almasly, 2020). This also broadens deep cultural insights. This study is important because discussion isn't taken into account enough as a way to improve cognitive skills, especially in the Arabic language, and it has the ability to make multilingual education better.

Previous studies have shown that conversation can help improve speech and critical thinking skills, but not as much has been said about how it can help with learning Arabic vocabulary. A lot of earlier study has focused on debate within the framework of broad rhetorical growth (Blumenau & Lauderdale, 2024; Berglund, 2020; Schröder et al., 2020). However, it

hasn't looked into specific language elements, especially vocabulary. The purpose of this study is to close that gap. For instance, studies that do not address the quantitative or qualitative growth of vocabulary merely assess how debate affects students' speaking confidence (Ebadi & Ebadijalal, 2022; Bashori et al., 2021; Dansieh et al., 2021). At the same time, more attention needs to be paid to the language method of teaching Arabic. This study aims to fill a gap in the research by using Arabic conversation as a direct way to improve language learning.

Many people agree that debate, which is an organized form of reasoning, is beneficial for your brain. Studies have shown that debating improves logical reasoning, critical thought, and the ability to make beneficial decisions. For instance, teachers use debate as a teaching tool to enhance public speech and thinking skills (González-Pérez & Ramírez-Montoya, 2022; Ritonga et al., 2022; Lucas & Stob, 2020). In the meantime, discussion not only improves reasoning, but it also helps with controlling emotions and listening actively (Reeve, 2024; van Belle et al., 2020; Nichols & Straus, 2021). There is some agreement, but different ideas about what discussion means. Some people see it as a way to learn together, while others see it

as a way to compete. From this point of view, argument is complicated because it involves mental, emotional, and social abilities. Cognitive benefits include critical thinking, creativity, problem-solving, and debate abilities. All of these talents are essential for the comprehensive development of persons.

Although socializing is good for your brain, not as much is known about how it may influence you down the road. Most research neglects the changes in the brain over time and only considers temporary ability increases. Furthermore, there are not many studies that look into how cultural and linguistic factors affect cognitive outcomes. Researchers have not studied the impact of arguments presented in one's native tongue versus a second language, such as Arabic. To further understand how debates impact our cognitive processes, researchers can conduct longitudinal experiments that focus on different kinds of language.

As a Semitic language with a lot of history and culture behind it, Arabic is an important part of schooling around the world. Linguists often think of Arabic as a complicated language with diglossia, which means that Modern Standard Arabic and different accents live together. This dichotomy presents students with both fresh opportunities and difficulties (Hedrick & McHenry-Sorber, 2023; Singh & Alhulail, 2022; Collins & Cockburn, 2020). Furthermore, educators frequently highlight the literary and religious significance of Arabic (Bakalla, 2023; Saada & Magadlah, 2021). Due to its exceptionally complex grammatical rules, phonetics, and structures, this perspective provides a more comprehensive insight

into the pedagogy of Arabic for speakers of other languages. Key considerations include the language's framework, cultural context, and influence on individual identities.

Many modern methods aren't available to teach Arabic, despite its importance. Researchers have found that students in Arabic language schools often learn things by heart because they don't have any intriguing learning materials (Assaly & Jabarin, 2024; Alhamami & Almosa, 2023; Tayyara, 2022). Despite the fact that some studies have examined the potential benefits of conversational approaches, few have examined the potential of specific tactics, such as debates, to aid in the acquisition of the Arabic language. Future research should address this information gap by investigating the effectiveness of innovative teaching methods in fostering critical thinking and language acquisition among students.

The first thing you need to do to learn a language is to build your knowledge. Fun activities can help you do this. The goal of interactive learning is to help people actively learn new words through real-life use, practice, and feedback (Özener, 2024; Lee et al., 2023; Gebre & Polman, 2020). There are other ways to remember concepts that don't always help with knowing a lot of words. Kids can remember and use new words better by debating, which gives them a chance to use new words in real-life situations. The interactive method emphasizes collaboration, contextualization, and learning through a variety of mediums. All of these help build language.

However, there has been insufficient research on the effectiveness of interactive methods such as discussions, particularly in languages other than English. One study on learning English words shows promise, but there isn't much related research on learning Arabic words yet. Also, most studies don't look at how different learners think or what language they already know (Lichtman & VanPatten, 2021; Lightbown & Spada, 2021; Dooly & Sadler, 2020). In order to solve this problem, we can look at how interaction affects different learner traits and do a cross-linguistic comparative study to see if this method works for all languages.

Along with the study plan, we will look at the role of talk in cognitive processes, how challenging it is to learn Arabic, and how engaging methods can help with learning new words. While this study yields some intriguing results, it also presents numerous issues that require further investigation in future studies. This study will help us learn more about how Arabic discourses help with language and brain growth. This will lead to better ways to teach Arabic as a second language.

This study adopts a novel approach by demonstrating the clear connection between vocabulary acquisition and Arabic conversation. Compared to previous research, this study examines the effects of conversation on the quantity and quality of words learned using more comprehensive cognitive testing techniques. One example is how discussion has helped language improve generally without separating the vocabulary part (Engwall & Lopes, 2022; LeClair et al., 2020). This research gives us a way to think about things that is more focused on the language aspect. By

looking at both cognitive and verbal parts together, this study adds something new to the field of Arabic language teaching and broadens the view of debate as a way to learn.

What is the impact of Arabic arguments on students' vocabulary acquisition? That is the issue this research seeks to address. Debate has a dual purpose in this setting, as both a means of language instruction and an interactive tool for expanding one's vocabulary. This study used a quantitative technique to test the students' vocabulary both before and after the discussions. Results demonstrate the efficacy of such approaches in tracking linguistic development among ELLs (Bendary et al., 2021; Soland & Sandilos, 2021; Roo et al., 2020). The primary objective is to ascertain the practical and efficient use of debate in enhancing the vocabulary of Arabic language students.

The study's main idea is that talking Arabic much helps with learning new words by improving brain processes like word association and understanding what words mean in context. Debate events give students a chance to use language in a variety of situations, which helps them remember and understand it better. participating in conversations improves both word association and syntactic understanding, which are two important skills for learning new words (Rasti-Behbahani & Shahbazi, 2022; Leech, 2021; Vafae & Suzuki, 2020). This practice enhances the capacity to employ suitable vocabulary to construct arguments. The preliminary findings have implications for the development of the Arabic teaching curriculum, particularly for the utilization of argumentation as a

strategic pedagogical approach to enhance students' vocabulary.

RESEARCH METHODOLOGY

This research explores how debating in Arabic influences students' vocabulary development. The study uses a quasi-experimental design paired with quantitative methods and was conducted over a ten-week period from November 2024 through mid-January 2025. Forty tenth graders from Satuan Muadalah Ulya were carefully chosen and split into two groups of twenty each: one experimental and one control group. Selection was based on specific criteria to ensure both groups had similar starting vocabulary skills. The first step involved preparing the research tools, which included a vocabulary test with thirty multiple-choice questions and a brief ten-question survey to capture students' opinions about the debate technique. The survey's reliability was confirmed using Cronbach's Alpha and Pearson's correlation, resulting in a strong reliability score of 0.932.

Next, both groups took a pre-test to confirm their vocabulary proficiency was on par. The control group, class XC, continued their usual learning routines, while the experimental group, class XD, took part in ten one-hour Arabic debate sessions. These sessions were guided by modules, workbooks, and relevant vocabulary lists and were held in the classroom, with discussions recorded by audio devices for documentation purposes. After completing the debate sessions, a post-test was given to both groups to assess their vocabulary improvements.

After gathering all the information, the researcher carefully examined it using

SPSS version 26. To find out if there was a meaningful difference in vocabulary scores between the group that participated in the debates and the group that did not, an independent-sample t-test was conducted on the post-test data. Additionally, a paired-sample t-test was performed to track each group's improvement by comparing their scores before and after the intervention. Besides these analyses, observations in the classroom and student surveys were used to evaluate how engaged the students were and to collect their thoughts on the Arabic debate technique. The results showed that taking part in debates positively influenced the students' vocabulary growth. This was supported not only by the data analysis but also by the positive responses from the students. These findings align well with earlier studies by (Maros et al., 2023; White et al., 2021; Lavi et al., 2021). Because the research was carefully designed and systematically carried out, the findings are trustworthy and offer clear insights into how debating in Arabic can help improve language skills.

RESULTS AND DISCUSSION

Engaging in Arabic conversation contributes significantly to the development of both language proficiency and critical thinking abilities. This process entails grappling with sophisticated subject matter, formulating coherent and persuasive arguments, and mastering the complexities of grammar and sentence construction. Research by (Alkhudiry, 2022; Heller and Kern, 2021; Kopp and Krämer, 2021), highlights the role of interactive activities—such as debates—in fostering linguistic and cognitive growth. Nonetheless, the

success of such practices is closely tied to factors like the preparedness of the educational setting, the qualifications of instructors, and the level of student engagement, which underscores the need for more in-depth exploration before widespread adoption.

Debating offers learners a valuable chance to acquire new vocabulary by placing words in practical, real-life contexts—especially when they develop arguments or engage in discussions. The repeated exposure to these words during debates helps learners remember them more easily. Beyond vocabulary, debates create genuine situations for language use, which contributes to overall improvements in communication skills. This activity also supports cognitive growth by enhancing mental flexibility and strengthening long-term memory, both of which are crucial for critical thinking and decision-making abilities. Research from (Hossain, 2024; Cao and Mao, 2024; and Alkhudiry, 2022) reinforces these points and aligns with the

Output Hypothesis, which stresses that actively producing language through rewriting and feedback plays a key role in language acquisition. However, the effectiveness of debates as a teaching strategy must be carefully evaluated, since its success depends heavily on factors like the learners' readiness, teacher support, and a conducive learning environment.

The course may incorporate debates to create a more engaging and collaborative learning environment. Learning objectives are something that students must have after completing the learning process (Hanif et al., 2023, Logan et al., 2021). However, for children who struggle with verbal communication, providing them with resources such as word lists or sample arguments can boost their confidence in participating. However, resolving various issues, including variations in language competency and limited resources, is crucial for successful discussions.

Table 1. Descriptive Statistics Results

Class	N	Mean	Std. Deviation	Std. Error Mean
posttest_eksperiment	20	74,4500	2,76205	,61761
posttest_kontrol	20	52,7000	1,59275	,35615

The experimental group had an average posttest score of 74.45 points, with a standard deviation of 2.76 points. The control group, on the other hand, had an average posttest score of 52.70 points, with a standard deviation of 1.59 points. This difference shows that debate-based ways of teaching Arabic are much better at helping students learn new words than standard ways.

The experimental group had a higher average than the control group by 21.75

points. This shows that the conversation method has a much bigger effect than just learning without arguing. It also helps people learn new words. The experimental group's standard deviation is 2.76, while the control group's is 1.59, which means that scores are more evenly spread out and don't change as much. By comparing the total score to the results of the association test for each questionnaire item, this validity data shows whether or not the item can be used as a measuring tool. With 20

people as a sample and a significance level of $\alpha = 0.05$, the number in the table, $r = 0.444$, is used as a guide. The 10 items in the questionnaire all have r -values that are higher than the r -value in the table. This indicates that all the items have a strong correlation with the overall score, thereby confirming their validity. To sum up, all of the items measure the things that were meant to be measured, and they can all be used in future studies without any changes.

Table 2. Reliability Test Results

Cronbach's Alpha	N of Items
,932	10

We conducted a study using the Cronbach's Alpha test to assess the reliability of the research tool. With a Cronbach's Alpha number of 0.932, the study shows that the tool used has a very high level of internal consistency. This number is a lot higher than the normally accepted level of 0.70. This implies that the study can confidently use the data from the 10 tested items. This means the tool used has high internal validity, ensuring stable and accurate results.

Table 3. Results of the Normality Test

Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pre test eksperimen	,119	20	,200*	,942	20	,260
post test eksperimen	,122	20	,200*	,953	20	,409
pre test kontrol	,143	20	,200*	,935	20	,192
post test kontrol	,143	20	,200*	,935	20	,192

The normality test showed that the data is normally distributed across all groups, both before and after the test for the experimental and control classes. The Kolmogorov-Smirnov and Shapiro-Wilk tests both gave results above 0.05 for each group. For example, the Kolmogorov-

Smirnov test gave a value of 0.200, and the Shapiro-Wilk test gave a value between 0.192 and 0.409. This means that the data is normally distributed, which means we can use parametric statistical methods like the t-test to look at it some more.

Table 4. Results of the Independent Samples Test

Nilai	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
Equal variances assumed	8.355	.006	30.507	38	.000	21.75000	.71294	20.30672	23.19328
Equal variances not assumed			30.507	30.378	.000	21.75000	.71294	20.29473	23.20527

The Independent Samples t-Test study shows an F value of 8.355 with a significance level of 0.006, which means that the two groups do not have the same variation. This means that there is a statistically significant difference between the control group and the experimental group in terms of the average post-test scores. The t-value is 30.507 and the significance level is 0.000. For this reason, the discussion method works a lot better than the traditional method at helping students learn new words.

Students can learn new words by using them over and over again in debate situations that require them to think critically and solve problems. The purpose of muhadatsah is to train the students' tongues to become accustomed to and fluent in conversing in Arabic (Basith & Setiawan, 2022; Kholisin et al., 2022). This fits with the Output Hypothesis, which says that using language helps you learn it. Debate also helps people learn how to think critically, which is useful for learning a language (Kasneji et al., 2023, Chatfield, 2022) (Chatfield, 2022). The control group, on the other hand, that used traditional methods improved less, since these methods are more passive and don't allow for as much active practice.

This study also highlights the significance of student motivation for learning. The students in the control group who took part in more discussions tended to do better overall. Therefore, teachers must provide enough help so all students, even those who aren't as confident, can participate.

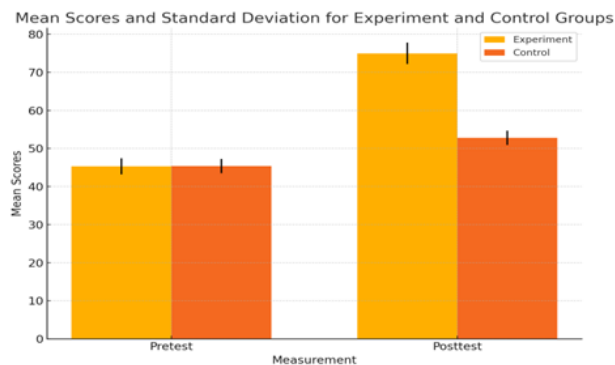


Figure 1: Pretest and posttest diagrams of the experimental and control classes.

There is a big difference between the experimental and control groups in the bar chart, which shows how well the argument method works to help students improve their language skills. This study's central thesis is that learning Arabic through debate is both advantageous and innovative. Debates enhance your critical thinking and communication abilities in addition to teaching you new vocabulary. Although there are some issues with the study's duration and sample size, these findings demonstrate that debate holds enormous potential as an Arabic language instruction that may prepare students for the demands of the global community.

CONCLUSION

This study shows that the discussion method is a lot better than the traditional method at helping students learn new words and improve their ability to think critically while learning Arabic. The experimental group's average post-test scores were significantly higher than those of the control group. This shows that arguments can help with active learning that includes problem-solving and analysis. It is very likely that these results are correct because the instruments used were very

valid and reliable. This research is significant because it shows that the argument method works, which supports both the Output Hypothesis and the social learning theory. Adding discussion to the school curriculum can make learning more interesting, teach students how to think critically, and get them ready to deal with problems that affect people all over the world. These results are useful for teachers and program designers who are looking for new ways to help students improve their language skills. However, this way will only work if teachers help students participate as much as possible, especially those who aren't very good at speaking English. This means that the argument method not only improves language learning, but it also helps people build a wider range of cognitive skills.

ACKNOWLEDGEMENT

We extend our heartfelt gratitude to everyone who contributed to the completion of this story. To be more specific, we want to thank Mr. H. Mahbub, M.Ag., and Mr. Abdul Basith, M.Pd., from Universitas KH. Mukhtar Syafaat, for their important help with the writing process. We'd also like to thank the kids in classes XC and XD Satuan Muadalah for taking part, as well as all of the teachers and office staff at Satuan Muadalah Ulya for being there for us and giving us tools that were very useful. We want to take a moment to thank our friends in the Arabic Language Education program for all the help and support they have given us during this process. May this work be useful to the people who read it and help the field of information grow.

REFERENCES

- Ensiklira, S., Tamba, S., Sianipar, R. E., & Situmeang, D. M. (2023). Manajemen Pengelolaan Wisata Religi. *Jurnal Pendidikan Sosial Dan Humaniora*, 2(15018), 1–10.
- Fadli, M. R. (2021). Memahami Desain Metode Penelitian Kualitatif. *Medan, Restu Printing Indonesia, Hal.57*, 21(1), 33–54. <https://doi.org/10.21831/hum.v21i1>.
- Fatinah, M. (2022). *Manajemen Masjid Raya Al-Mashun Medan Dalam Pengembangan Dakwah Islam*.
- Hafizah, N. (2025). Museum Sultan Syarif Kasim sebagai Destinasi Wisata Sejarah Budaya Melayu dan Pendidikan di Kabupaten Bengkalis Provinsi Riau. *JlIP (Jurnal Ilmiah Ilmu Pendidikan)*, 8(1), 1393–1403.
- Hermanto, B., Pranata, M. F., & Anwar, M. (2024). Pengembangan Desa Wisata Religi Berbasis Bumdesa Untuk Meningkatkan Pendapatan Dan Pelestarian Lingkungan Desa Di Bangkal. *Journal of Innovation Research and Knowledge*, 4(5), 2563–2568.
- Jumawati, Ramli, R., Jumawati, Ramli, R., Sukriati, Hamran, Ahmad, M. I., & Saleh, A. R. (2024). integrasi, Implementasi, dan Evaluasi Pengendalian Mutu dalam Manajemen Modern. *Sulawesi Tenggara Educational Journal*, 5(3), 225–232.
- Kholid, H., & Arifien, A. (2024). Peran Nazir Dalam Optimalisasi Pemberdayaan Aset Wakaf Di Kota Tegal (Studi Kasus Di Masjid Al-Karomah Kedungbanteng). *Al-Mi'thoa*, 2(1), 11–24.

- Najmudin, F., & Bayinah, A. N. (2022). Kompetensi Takmir Dalam Menjaga Kualitas Laporan Keuangan Masjid: Telaah Literatur. *Jurnal Akuntansi Dan Keuangan Islam*, 10(2), 129–147. <https://doi.org/10.35836/jakis.v10i2.361>
- Nardawati, N. (2021). Perencanaan Pendidikan Yang Baik Sebagai Upaya Peningkatan Mutu Pendidikan Di Era Digital. *Jurnal Literasiologi*, 6(2), 14–25. <https://doi.org/10.47783/literasiologi.v6i2.254>
- Nursukma Suri, Khairawati, & Nursabsyah. (2019). Akulturasi Budaya pada Bangunan Masjid Raya Al-Ma'shun di Kota Medan (Kajian Semiotik Deskriptif). *Talenta Conference Series: Local Wisdom, Social, and Arts (LWSA)*, 2(2). <https://doi.org/10.32734/lwsa.v2i2.720>
- Prastiwi, M. I., & Laila, U. (2024). Strategi Membangun Pariwisata Religi Berbasis Inklusi di Masjid Baitul Arham Sumenep. *Indonesian Journal of Sociology, Education, and Development (IJSED)*, 6(2), 146–160.
- Ramadhan, M. (2021). *Metode Penelitian*.
- Rasyid, A., Tsahbana, M., & Nurrahman, M. Y. (2023). Fungsi Masjid Sebagai Tempat Ibadah Dan Pusat Ekonomi Umat Islam. *Religion : Jurnal Agama, Sosial, Dan Budaya*, 1(4), 374–383.
- Rianse, M. S. (2025). Strategi Pengembangan Objek Wisata Religi pada Masjid Al Alam Kota Kendari. *Jurnal Teknologi Dan Sains Modern*, 1(2), 74–80.
- Saniah, H., Nov Al-Khresheh, M. H. (2024). The role of presentation-based activities in enhancing speaking proficiency among Saudi EFL students: A quasi-experimental study. *Acta Psychologica*, 243, 104159. <https://doi.org/10.1016/j.actpsy.2024.104159>
- Alhamami, M., & Almosa, A. (2023). Learning Arabic as a second language in Saudi universities: Ajzen's theory and religious motivations. *Language, Culture and Curriculum*, 36(4), 509–532. <https://doi.org/10.1080/07908318.2023.2242912>
- Almashy, A. A. M. (2020). An investigation into the impact of extensive reading activities on the development of EFL learners' speaking competencies: a quasi-experimental study of Saudi university students. Newcastle University.
- Alkhudiry, R. (2022). The contribution of Vygotsky's sociocultural theory in mediating L2 knowledge co-construction. *Theory and Practice in Language Studies*, 12(10), 2117–2123. <https://doi.org/10.17507/tpls.1210.19>
- Almelhes, S. (2024). Enhancing Arabic language acquisition: Effective strategies for addressing non-native learners' challenges. *Education Sciences*, 14(10), 1116. <https://doi.org/10.3390/educsci14101116>
- Assaly, I., & Jabarin, A. (2024). Arab Israeli EFL teachers' perceptions and practices vis-à-vis teaching higher-order thinking skills: A complicated relationship. *Language Teaching Research*, 28(4), 1635–1655. <https://doi.org/10.1177/13621688211032426>

- Bakalla, M. H. (2023). Arabic culture: through its language and literature. Taylor & Francis.
- Bashori, M., Van Hout, R., Strik, H., & Cucchiarini, C. (2021). Effects of ASR-based websites on EFL learners' vocabulary, speaking anxiety, and language enjoyment. *System*, 99, 102496.
<https://doi.org/10.1016/j.system.2021.102496>
- Basith, A., & Setiawan, Y. (2022). Implementasi biah lughowiyah dalam meningkatkan maharah kalam. *TADRIS AL-ARABIYAT: Jurnal Kajian Ilmu Pendidikan Bahasa Arab*, 2(1), 140–154.
<https://doi.org/10.30739/arabiyat.v2i1.1428>
- Bendary, A. F., Abdelaziz, A. Y., Ismail, M. M., Mahmoud, K., Lehtonen, M., & Darwish, M. M. F. (2021). Proposed ANFIS based approach for fault tracking, detection, clearing and rearrangement for photovoltaic system. *Sensors*, 21(7), 2269.
<https://doi.org/10.3390/s21072269>
- Berglund, L. (2020). The shrinking city as a growth machine: Detroit's reinvention of growth through triage, foundation work and talent attraction. *International Journal of Urban and Regional Research*, 44(2), 219–247.
<https://doi.org/10.1111/1468-2427.12858>
- Blumenau, J., & Lauderdale, B. E. (2024). The variable persuasiveness of political rhetoric. *American Journal of Political Science*, 68(1), 255–270.
<https://doi.org/10.1111/ajps.12703>
- Chatfield, T. (2022). *Critical thinking: Your guide to effective argument, successful analysis and independent study*.
- Cao, Z., & Mao, Z. (2024). Studies on positive evidence feedback in second language writing: Status quo and implications. *RELC Journal*, 55(1), 209–218.
<https://doi.org/10.1177/00336882211072905>
- Collins, A. G. E., & Cockburn, J. (2020). Beyond dichotomies in reinforcement learning. *Nature Reviews Neuroscience*, 21(10), 576–586.
<https://doi.org/10.1038/s41583-020-0355-6>
- Dansieh, S. A., Owusu, E., & Seidu, G. A. (2021). Glossophobia: The fear of public speaking in ESL students in Ghana. *Language Teaching*, 1(1), p22–p22.
<https://doi.org/10.30560/lt.v1n1p22>
- Dooly, M., & Sadler, R. (2020). "If you don't improve, what's the point?" Investigating the impact of a "flipped" online exchange in teacher education. *ReCALL*, 32(1), 4–24.
<https://doi.org/10.1017/s0958344019000107>
- Ebadi, S., & Ebadijalal, M. (2022). The effect of Google Expeditions virtual reality on EFL learners' willingness to communicate and oral proficiency. *Computer Assisted Language Learning*, 35(8), 1975–2000.
<https://doi.org/10.1080/09588221.2020.1854311>
- Engwall, O., & Lopes, J. (2022). Interaction and collaboration in robot-assisted language learning for adults. *Computer Assisted Language Learning*, 35(5–6), 1273–1309.

- <https://doi.org/10.1080/09588221.2020.1799821>
- Gebre, E. H., & Polman, J. L. (2020). From “context” to “active contextualization”: Fostering learner agency in contextualizing learning through science news reporting. *Learning, Culture and Social Interaction*, 24, 100374.
<https://doi.org/10.1016/j.lcsi.2019.100374>
- González-Pérez, L. I., & Ramírez-Montoya, M. S. (2022). Components of Education 4.0 in 21st century skills frameworks: systematic review. *Sustainability*, 14(3), 1493.
<https://doi.org/10.3390/su14031493>
- Kasneci, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., & Hüllermeier, E. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274.
<https://doi.org/10.1016/j.lindif.2023.102274>
- Lavi, R., Tal, M., & Dori, Y. J. (2021). Perceptions of STEM alumni and students on developing 21st century skills through methods of teaching and learning. *Studies in Educational Evaluation*, 70, 101002.
<https://doi.org/10.1016/j.stueduc.2021.101002>
- LeClair, A., Haque, S., Wu, L., & McMillan, C. (2020). Improved code summarization via a graph neural network. *Proceedings of the 28th International Conference on Program Comprehension*, 184–195.
<https://doi.org/10.1145/3387904.3389268>
- Lee, D., Kim, H., & Sung, S.-H. (2023). Development research on an AI English learning support system to facilitate learner-generated-context-based learning. *Educational Technology Research and Development*, 71(2), 629–666.
<https://doi.org/10.1007/s11423-022-10172-2>
- Lialikhova, D. (2019). “We can do it together!”–But can they? How Norwegian ninth graders co-constructed content and language knowledge through peer interaction in CLIL. *Linguistics and Education*, 54, 100764.
<https://doi.org/10.1016/j.linged.2019.100764>
- Lichtman, K., & VanPatten, B. (2021). Was Krashen right? Forty years later. *Foreign Language Annals*, 54(2), 283–305.
<https://doi.org/10.1111/flan.12552>
- Lightbown, P. M., & Spada, N. (2021). *How languages are learned* 5th Edition. Oxford university press.
- Nichols, M. P., & Straus, M. B. (2021). *Lost Art of Listening*. Guilford Publications.
- Lucas, S. E., & Stob, P. (2020). *The art of public speaking*. McGraw-Hill.
- Özener, O. Ö. (2024). Context-based learning for BIM: simulative role-playing games for strategic business implementations. *Smart and Sustainable Built Environment*, 13(4), 908–933.
<https://doi.org/10.1108/sasbe-08-2022-0184>

- Reeve, J. (2024). Understanding motivation and emotion. John Wiley & Sons.
- Ritonga, M., Febriani, S. R., Kustati, M., Khaef, E., Ritonga, A. W., & Yasmar, R. (2022). Duolingo: An Arabic speaking skills' learning platform for andragogy education. *Education Research International*, 2022(1), 7090752.
<https://doi.org/10.1155/2022/7090752>
- Roo, A. K., Ardasheva, Y., Newcomer, S. N., & Magaña, M. V. (2020). Contributions of tracking, literacy skills, and attitudes to science achievement of students with varied English proficiency. *International Journal of Bilingual Education and Bilingualism*.
- Saada, N., & Magadlah, H. (2021). The meanings and possible implications of critical Islamic religious education. *British Journal of Religious Education*, 43(2), 206–217.
<https://doi.org/10.1080/01416200.2020.1785844>
- Schröder, P., Lemille, A., & Desmond, P. (2020). Making the circular economy work for human development. *Resources, Conservation and Recycling*, 156, 104686.
<https://doi.org/10.1016/j.resconrec.2020.104686>
- Singh, H. P., & Alhulail, H. N. (2022). Predicting Student-Teachers Dropout Risk and Early Identification: A Four-Step Logistic Regression Approach. *IEEE Access*, 10, 6470–6482.
<https://doi.org/10.1109/access.2022.3141992>
- Soland, J., & Sandilos, L. E. (2021). English language learners, self-efficacy, and the achievement gap: Understanding the relationship between academic and social-emotional growth. *Journal of Education for Students Placed at Risk (JESPAR)*, 26(1), 20–44.
<https://doi.org/10.1080/10824669.2020.1787171>
- Tayyara, A. el-R. (2022). The practicability of proverbs in teaching Arabic language and culture. *Language Teaching Research*, 26(4), 799–819.
<https://doi.org/10.1177/1362168819895253>
- Vafaei, P., & Suzuki, Y. (2020). The relative significance of syntactic knowledge and vocabulary knowledge in second language listening ability. *Studies in Second Language Acquisition*, 42(2), 383–410.
<https://doi.org/10.1017/s0272263119000676>
- van Belle, E., Giesen, J., Conroy, T., van Mierlo, M., Vermeulen, H., Huisman-de Waal, G., & Heinen, M. (2020). Exploring person-centred fundamental nursing care in hospital wards: A multi-site ethnography. *Journal of Clinical Nursing*, 29(11–12), 1933–1944.
<https://doi.org/10.1111/jocn.15024>