

Analysis on the Needs for the Development of an Interactive Module for Arabic Grammar through Syawahid Hadith 40

Umair Nu'man Ubaidillah, Mohd Fauzi Abdul Hamid*

Universiti Sultan Zainal Abidin

Email: ibnubaidillah16@gmail.com, mohdfauzi@unisza.edu.my

DOI Link: <http://dx.doi.org/10.6007/IJARBSS/v15-i8/26178>

Published Date: 15 August 2025

Abstract

Learning Arabic grammar based on the book or book of turath with discussions using text can be translated into a more creative and innovative form through the application of the latest technology. Interactive websites are one of the technological mediums that aim to deliver learning content in a simple, interesting, and easy-to-understand manner. This study aims to survey students' perceptions of the need to design and develop interactive website modules for learning Arabic grammar. The approach used in this study is Design and Development Research. The first phase involves a needs analysis by distributing questionnaires to 200 Bachelor of Arabic Studies students who are currently and have taken the Al-Hadis Al-Nabawi Text Study course. The questionnaire covers aspects of the use of learning materials, pedagogical approaches, tendencies towards innovation, and the need to use interactive websites. Quantitative data was analyzed using Statistical Package for the Social Sciences (SPSS) software to obtain percentage values, mean, and standard deviation. The study findings show that there is a high need for the development of interactive website-based learning modules in teaching Arabic grammar. Technological innovation in text-based learning, especially in the traditional aspects of Arabic grammar, is very important to improve understanding and focus on more effective learning.

Keywords: Needs Analysis, Instructional Modules, Interactive Websites, Arabic Grammar, Technology Applications

Introduction

Among the most widely spoken languages worldwide is Arabic. According to Rizqi (2024), about 470 million people speak Arabic, which is an official language in 22 nations. Additionally, this language is acknowledged as one of the UN's official languages. Arabic grammar is one area of Arabic language expertise. This knowledge is very important to master because it can prevent errors in speech and writing. According to studies, learning proper Arabic grammar can help students build stronger sentences and feel more comfortable speaking the language (Abdallah & Noor, 2025). This can be seen when this language is widely

taught at various levels of study in Malaysia with many universities in Malaysia offering Arabic language courses, either as a core course for Islamic-related programmes (such as sharia, Islamic studies, and humanities studies) or as an elective course for students from various fields (Lotfie et al., 2012). By mastering Arabic grammar, it will make Arabic language function well or vice versa.

Malaysian teaching practices remain primarily traditional. According to Zaki et al. (2024), conventional methods for teaching Arabic in Malaysian religious secondary schools include lectures, memorisation, repetition (*at-tikrar*), and teacher-centered translation. Because they have been exposed to many modern technologies, students will lose motivation and achieve less than desirable grades. Traditional teaching approaches such as lectures, memorisation, and translation make students less active, easily bored, and uninterested in studying Arabic, lowering their performance (Islamiah, 2024).

Students participating in the Bachelor of Arabic Studies Programme, Faculty of Language and Communication, Sultan Zainal Abidin University were required in the 6th semester to study Arabic through the Study of the Text of *Al-Hadis Al-Nabawi* from the 40 *Hadiths* of Imam Nawawi *rahimahullah*. The study covers components of Arabic syntax, and based on the syllabus, there is too much to master in 14 weeks. Meeting in the lecture hall, which is only available for three hours per week, requires students to take the initiative to study independently in an understandable, enjoyable, and participatory manner. Interactive teaching strategies have been shown to enhance language skills, academic achievement, and student satisfaction in subjects such as English and Science (Muñoz-Losa & Corbacho-Cuello, 2025).

This problem can be solved by combining conventional components (such as knowledge-based teaching and memorisation) with modern methods (such as student-centered learning, the use of technology, and collaborative activities) that can improve a variety of student skills, including factual knowledge, routine problem solving, creativity, and critical thinking (Tai & Zhao, 2023). Along with technology advancements and issues, the adoption of active, digital, and enjoyable learning tactics such as fun learning, storytelling, singing, and language games can reduce boredom and boost student motivation and proficiency (Bahy et al., 2024). AI, virtual reality, and online learning technologies improve learning effectiveness and student engagement (Gampala, 2023). According to Nawi Jusuh et al. (2014), a method that requires students to focus and think deeply during teachers' lectures, followed by a simple and interesting presentation, will help students grasp and recall teachings more effectively. As a result, mastery of Arabic grammar must be translated in an understandable and student-friendly manner.

In addition, one of the effective teaching methods is the construction of modules and their use as a guide to achieve learning objectives. Learning modules, whether face-to-face or online, have been proven to help students improve academic performance, motivation and interest in learning. Students who use modules show better achievement in exams and enjoy the learning process more thoroughly (Cramer et al., 2018). The use of interactive modules can also make some complex learning easier to understand and master. According to Manggala et al., (2024), the incorporation of multimedia elements such as video, animation

and simulation in modules makes learning more dynamic, interactive and interesting, as well as helping to understand complex concepts.

The development of interactive web-based modules in Arabic grammar learning is an alternative method that is suitable for the development of 21st century skills. Interactive learning emphasises the development of skills such as critical thinking, problem solving, communication and collaboration (Dahlan, 2023). The usage of interactive tools can help motivate students to actively participate. According to Prytyka (2023), students are encouraged to interact with materials, teachers, and peers to better absorb and recall information. As a result, students are better able to master their learning and apply what they have learned. Dahlan (2023) states that students not only master theory, but also have the opportunity to apply knowledge in real-world situations through simulations, discussions, and practical assignments.

Therefore, this study focuses on students' views on the need to develop an interactive Arabic grammar module using a website called *syawahid Hadith 40*.

Methodology

Research Design

Needs Analysis is a very important initial step in the Design and Development Research (DDR). Its main function is to identify, understand, and document the needs of users and stakeholders before the design and development process is carried out. This ensures that the product or system being developed truly meets the actual requirements and reduces the risk of project failure.

This study employs questionnaire as a research instrument in the Needs Analysis phase to understand the needs to develop an interactive website module by examining the students' views. This study focuses on the *Al-Hadith Al-Nabawi* Text Study Course which is a mandatory course for students of Bachelor's Degree in Arabic Language Studies, UniSZA. This course is offered in the sixth semester of the study programme.

This study used convenience sampling, which is an appropriate approach based on ease of access and willingness of participants to provide feedback. A total of 200 students who had studied the *Al-Hadith Al-Nabawi* Text Study Course at UniSZA were involved in this phase. The number of respondents represented the students from various groups of the Bachelor's Degree in Arabic Language Studies. The data collected was intended to obtain their views on the need to develop this module.

The first phase of this study used a questionnaire as its instrument. A set of Needs Analysis questionnaires were issued to students to gather input and opinions on the importance of developing interactive internet modules for Arabic grammar study at UniSZA. The questionnaire was structured and adjusted based on the requirements of study. The questionnaire focused on five aspects; respondent demographics, the usage of learning resources, challenges with learning approach problems, the tendency to employ innovation in course learning, the usability needs of interactive websites, and module design.

The data from the Needs Analysis phase was analysed using the Statistical Package for Social Science (SPSS) software. The analysis was descriptive in nature, using percentages, means, and standard deviations. The descriptive analysis findings were applied to assess the extent of need for interactive online modules in Arabic grammar learning based on student perspectives. The mean score and standard deviation were evaluated to determine the level of student's agreement.

Research Findings

Use of Learning Materials

This section contains analyses of items to obtain the respondents' feedback on the use of learning materials. Table 1 shows the mean score and standard deviation of each item in that aspect.

Table 1

Use of Learning Materials

	B: Use of Learning Materials	Mean	SD	Interpretation
B1	I refer to the main textbook in learning.	4.09	.854	High
B2	I use supplementary books as a reference.	3.96	.865	Moderately High
B3	I get learning materials from the library.	3.16	1.106	Moderately High
B4	I use mobile applications related to learning.	4.41	.689	High
B5	I write my own summary notes for reference.	4.10	.921	High
B6	I use computer software to learn.	4.08	.926	High
B7	I learn using notes in the form of graphics or infographics.	4.20	.897	High
B8	I use notes shared by the lecturer.	4.56	.599	High
B9	I follow learning videos given by the lecturer.	4.27	.735	High
B10	I follow online lectures.	4.35	.748	High
B11	I access interactive websites as learning materials.	4.22	.844	High
	Average	4.127	.835	High

Based on Table 1 above, the interpretation of the data shows that the aspect of the "use of learning materials" among students is at a High level, which is at an overall mean value of 4.127 and a standard deviation of .835. This shows that students use learning materials at a High level. The use of learning materials that recorded the highest mean score was the "use of notes shared by lecturers" (M=4.56, SD= .599) followed by the "use of mobile applications" (M=4.41, SD= .689).

There are several items that show a High level, namely the "attendance of online lectures" with a value of (M=4.35, SD=.748), followed by the "use of learning videos provided by lecturers" with a recorded value of (M=4.27, SD=.735). Next is the "use of interactive websites as learning materials" (M=4.22, SD=.844), followed by the "use of graphic or infographic notes" with a value of (M=4.20, SD=.897). The "use of own summary notes for reference" to record a value of (M=3.51, SD=.939) and the "use of library materials" (M=4.10, SD=.921). The "use of computer software to study" recorded (M=4.08, SD=.926). The "use of additional books as references" with a value of (M=3.96, SD=.865). The "use of learning materials from the library" with a value of (M=3.16, SD=1.106). All items recorded mean values at High and Moderately High levels only.

Issues and Challenges in Learning Approaches

This section analyses the items to obtain respondents' feedback on learning approach issues. Table 2 shows the mean score and standard deviation of each relevant items.

Table 2

Issues in Learning Approaches

	C: Issues in Learning Approaches	Mean	SD	Interpretation
C1	Lecturers explain completely using books or scriptures that are not enough to understand the learning content.	3.45	1.168	Moderately High
C2	It is difficult to communicate with lecturers outside of lecture time.	3.27	1.259	Moderately High
C3	It is difficult to communicate with friends outside of lecture time.	2.42	1.153	Moderate
C4	Limited time in lectures makes it difficult to understand topics in depth.	3.61	1.084	Moderately High
C5	Topic measures that do not meet the student's learning level.	2.83	1.181	Moderate
C6	Teaching notes provided by lecturers are difficult to understand.	2.39	1.069	Moderate
C7	Teaching approach does not actively involve students.	2.68	1.101	Moderate
C8	The cost of obtaining additional reference materials is too high.	3.13	1.225	Moderately High
C9	No complete teaching aids.	2.77	1.223	Moderate
C10	Lack of interactive learning materials in the form of websites.	2.95	1.210	Moderate
C11	Arabic grammar is not emphasised enough when learning <i>Hadith</i> .	3.16	1.188	Moderately High
	Average	2.969	1.169	Moderate

Table 2 shows the interpretation of data on learning approach issues experienced by students. The learning approach issues expressed were generally at a Moderate level with a mean score of 2.969 and a standard deviation of 1.169. The item with the highest mean score was the item "Limited time in lectures makes it difficult to understand the topic in depth", which was 3.61 with a standard deviation of 1.084. This was followed by the item "The lecturer fully explains using books or scriptures but is not enough to understand the learning content" with a mean score of 3.45 and a standard deviation of 1.168. Other items are "It is difficult to communicate with lecturers outside of lecture hours" with a value of (M=3.27, SD=1.259), "Arabic grammar is not emphasised enough when learning *Hadith*" with a value of (M=3.16, SD=1.188), "The cost of obtaining additional reference materials is too high" with a value of (M=3.13, SD=1.225), "Lack of interactive learning materials in the form of websites" with a value of (M= 2.95, SD=1.210), "Topic measures that do not meet the level of student learning" with a value of (M= 2.83, SD=1.181). Item "There are no complete teaching aids" with a value of (M= 2.77, SP= 1.223). Item "Teaching approach does not actively involve students" with a value of (M= 2.68, SD= 1.101). Item "It is difficult to communicate with friends outside of lecture hours" with a value of (M= 2.42, SD= 1.153). Item "The teaching notes provided by the lecturer are difficult to understand" with a value of (M= 2.39, SD= 1.069).

Tendency to Use Innovation in Course Learning

This section contains an analysis of the items to obtain respondents' feedback on their tendency to use innovation in learning courses. Table 3 shows the mean score and standard deviation of each item in this aspect.

Table 3

Tendency to Use Innovation

	D: Tendency to Use Innovation	Mean	SD	Interpretation
D1	I am more interested in learning that uses technology	4.16	.817	High
D2	I like using interactive learning materials	4.35	.632	High
D3	I am more focused when learning materials are presented interactively than just plain text	4.32	.736	High
D4	I like coloured notes because it helps me remember information better	4.46	.664	High
D5	I am interested in reading information that is accompanied by interesting graphics	4.48	.626	High
D6	I prefer information that uses clear and attractive writing designs	4.52	.609	High
D7	I am interested in using interactive website-based learning materials	4.39	.648	High
	Average	4.383	0.676	High

Based on Table 3 above, the interpretation of the data shows that the aspect of students' tendency towards the use of innovation in learning courses is at a High level with an overall mean score of 4.428 and a standard deviation of .554. All items recorded a mean score at a High level. The item that recorded the highest mean value was "information that has interesting writing" with a value of (M=4.54, SD=.641) followed by the item "information that has interesting graphics" with a value of (M=4.54, SD=.641). Next are the items "graphic notes in course learning" with a value of (M=4.48, SD=.720), "coloured notes in course learning" with a value of (M=4.47, SD=.696), "like information accompanied by audio explanations" with a value of (M=4.44, SD=.750), "interactive learning materials" with a value of (M=4.40, SD=.629), "information presented with animation (movement)" with a value of (M=4.29, SD=.828) and "learning that applies technology" with a value of (M=4.29, SD=.746).

The Needs to Use Interactive Websites

This section analyses the items to obtain respondents' feedback on the need to use interactive websites. Table 4 shows the mean score and standard deviation of each relevant item.

Table 4

The Needs to Use Interactive Websites

	E: The Needs to Use Interactive Websites	Mean	SD	Interpretation
E1	I believe that animated infographics make information easier to understand.	4.43	.622	High
E2	I believe that interactive websites make information more interesting.	4.44	.606	High
E3	I believe that interactive websites help students learn more effectively on their own.	4.40	.657	High
E4	I believe that interactive teaching such as quizzes on websites can improve my understanding.	4.43	.630	High
E5	I believe that interactive websites make it easier for students to remember important concepts.	4.40	.602	High
E6	I think that interactive websites can increase focus in learning.	4.37	.675	High
E7	I believe that learning through interactive websites is more flexible and can be accessed at any time	4.44	.615	High
E8	I feel that interactive websites allow me to review learning topics more easily.	4.41	.603	High
E9	I believe that learning through interactive websites is more enjoyable.	4.41	.667	High
E10	I think that interactive websites make learning more effective.	4.39	.663	High
	Average	4.412	0.634	High

According to the results in Table 4, students had a solid understanding of the importance of using interactive websites in learning, with an overall mean score of 4.412 and a standard deviation of .634. This result shows that students believe that interactive websites should be used as learning materials at a High level. All items recorded a High mean score. The items that recorded the highest mean values were “I believe interactive websites make information more interesting” with a value of (M=4.44, SD=.606) and “I believe that learning through interactive websites is more flexible and can be accessed at any time” with a value of (M=4.44, SD=.615). Next, the items “I believe that interactive teaching such as quizzes on websites can improve my understanding” with a value of (M=4.43, SD=.630), “I believe that animated infographics make information easier to understand” with a value of (M=4.43, SD=.622), “I feel that interactive websites allow me to repeat learning topics more easily” with a value of (M=4.41, SD=.603), “I believe that learning through interactive websites is more enjoyable” with a value of (M=4.41, SD=.667), “I believe that interactive websites help students learn independently more effectively” with a value of (M=4.40, SD=.657), “I believe that interactive websites make it easier for students to remember important concepts” with a value of (M=4.40, SD=.602), “I think that interactive websites make learning more effective” with a value of (M=4.39, SD=.663), “I think that interactive websites can increase focus in learning” with a value of (M=4.37, SD=.675).

Module Design

This section analyses the respondents' feedback on the needs of the interactive website module design items. Table 5 shows the mean score and standard deviation of each relevant item.

Table 5

Module Design

	F: Module Design	Mean	SD	Interpretation
F1	Information on interactive websites must be concise.	4.27	.806	High
F2	The information displayed must be easy to understand by users.	4.58	.562	High
F3	The information on interactive websites must be accurate.	4.59	.542	High
F4	The information on interactive websites must be reliable.	4.57	.580	High
F5	The type of text that moves must be clearly readable.	4.53	.701	High
F6	The color of the text, icons and graphics must be attractive and appropriate to the content.	4.64	.531	High
F7	The theme of the website must be in line with the learning topic.	4.60	.568	High
F8	The display design must be well organised.	4.60	.550	High
F9	Learning materials must be diversified such as charts, mind maps, numbering, and comparisons.	4.63	.524	High
F10	The audio used must be easy to understand.	4.62	.518	High
F11	The information display must be user-friendly and easily accessible.	4.65	.520	High
	Average	4.571	0.582	High

Based on Table 5 above, the interpretation of the data shows that students' perceptions on the need to use interactive website module design items are at a High level with an overall mean score of 4.571 and a standard deviation of .582. All items recorded High mean score. The item that recorded the highest mean value was "Information display must be user-friendly and easily accessible" with a value of (M=4.65, SD=.520) followed by the item "Text colours, icons and graphics must be attractive and appropriate to the content" with a value of (M=4.64, SD=.531) then "Learning materials need to be diversified such as charts, mind maps, numbering and comparisons" with a value of (M=4.63, SD=.524). Next are the items "The audio used must be easy to understand" with a value of (M=4.62, SD=.518), and "The theme of the website must be in line with the learning topic" with a value of (M=4.60, SD=.550), "The theme of the website must be in line with the learning topic" with a value of (M=4.60, SD=.568), "The information in the interactive website must be accurate" with a value of (M=4.59, SD=.542), "The information displayed must be easy for users to understand" with a value of (M=4.58, SD=.562), "The information in the interactive website must be reliable" with a value of (M=4.57, SD=.580), "The type of moving writing must be clearly readable" with a value of (M=4.53, SD=.701), "The information in the interactive website must be concise" with a value of (M=4.27, SD=.806).

Discussions

The results of this descriptive analysis demonstrate that students frequently use learning resources. Students' most frequently used learning material is lecture notes. Students frequently rely on lecturer-prepared notes since they cover subjects that lecturers have highlighted. The effective use of mobile learning applications yielded a High mean score.

Students prefer mobile applications because they are easier to use and understand. In contrast to traditional approaches, students who use mobile applications for language learning demonstrate a considerable improvement in test scores and language competence levels, according to a study by Gou (2023). These two elements have High mean scores, which suggests that learning modules that facilitate straightforward access to information for both lecturers and students are needed.

In addition, issues arising in the learning approach are also a factor in the need to develop this module. The findings show that students have most agreed that the limited time in lectures makes it difficult to understand topics on a subject in depth. The large syllabus to be studied causes lecturers to be unable to explain topics in depth. As a result, students have difficulty understanding important concepts, fail to relate theory to application, and are at risk of experiencing confusion or losing interest in the subject. The special features of interactive websites that summarise complex information are also combined with text, collecting information in an organised and centralised manner and are easily accessible can help with this problem. According to Lubis (2021), interactive websites allow students to access materials at any time, making learning more flexible, enjoyable and suitable for individual needs. In addition, the use of websites reduces the need for printed materials and allows lecturers to manage learning materials more systematically (Shang et al., 2022).

Students are interested in using innovation in the curriculum and learning materials, according to the findings from the examination of the tendency to use innovation. The majority of textbooks have less engaging material, less engaging presenting strategies, and less comprehensible writing. According to the results, students prefer material that is presented in an engaging way, with interactive aspects, vivid and visual annotations, and extra features like technology, animation, and interactive audio explanations. Interactive websites have all of these features. Memon et al. (2022) claim that student satisfaction, academic achievement, and functional performance are all significantly impacted by the use of technology in interactive learning.

Furthermore, the findings from the needs analysis of the design elements for the interactive website module in Arabic grammar learning indicate a very high demand from students. They require a user-friendly and easily accessible website. The majority of students prefer websites that are easy to use and user-oriented. If the website is difficult to navigate, many students tend to abandon it, which can negatively affect learning (Chaganti et al., 2023). They also need attractive font colors, icons, and graphics that are appropriate to the content. According to Hidayati (2021), good content design, including the proper use of colors, icons, and graphics, has been proven to positively impact students' achievement. Students exposed to websites with high-quality visual design demonstrated higher learning performance compared to those using websites with plain designs.

The results of the analysis of the need for the use of interactive web in Arabic grammar learning show that students believe that interactive websites in the development of Arabic grammar modules are a necessity. The students believe that interactive websites make learning more interesting and enjoyable. This coincides with the study by Tarigan (2023) which states that the use of interactive multimedia elements such as animation, colourful pictures and interactive videos makes students more involved and motivated. Additionally,

students think that interactive learning increases their motivation to learn. Aybuev and Aybuev (2025) assert that interactive learning raises student motivation, engagement, and attendance in the classroom, all of which indirectly lead to better performance. Furthermore, students think that interactive learning might improve their comprehension of the material. Through interactive activities like quizzes, exercises, and multimedia materials, students demonstrate a 31% improvement in knowledge retention and find it simpler to comprehend and retain information (O'Bannon et al., 2017). The students also believe that interactive websites provide great benefits to students and lecturers by increasing motivation, understanding, involvement and facilitating interaction and learning management. The use of this technology makes the learning process more effective, flexible and enjoyable for all parties.

This study is motivated by the pressing need to address the limitations of traditional lecture-based approaches in Arabic grammar learning, where time constraints, large syllabi and less engaging materials often hinder deep understanding and reduce student interest. The findings reveal that students highly value learning resources that are interactive, visually appealing, and accessible anytime, particularly through mobile applications and user-friendly websites. In response, this study contributes by designing and developing an interactive web-based Arabic grammar module that integrates multimedia elements, gamified quizzes, and organized content presentation to enhance motivation, comprehension, and engagement. Validated through expert consensus, the module offers a flexible and innovative learning platform that benefits both students and lecturers by improving knowledge retention, fostering active participation, and enabling systematic learning management in line with 21st-century educational needs.

Conclusion

In conclusion, the need to develop an interactive website module in learning Arabic grammar is appropriate based on the findings of the Needs Analysis from the students' perspectives. The developed module will incorporate the themes mentioned in the book *Al- Ajurrumiyyah's* discussion order. It will then take the *syawahid* from the *Al-Hadith Al- Nabawi* Text Study Course curriculum and post it to the interactive website. Examples are chosen from Imam Nawawi's 40 *Hadiths*, and every text is provided. The module's design has a strong emphasis on learning activities, evaluation, interactive components, objectives, and content. To make it easier for students to access, this module is posted to a dedicated YouTube account and presented as a video.

References

- Abdallah, H. & Noor, S. (2025). The importance of grammatical competence for non-arabic speakers in constructing correct structures. *International Journal of Research and Innovation in Social Science*, 8(12), 1631-1643. <https://doi.org/10.47772/ijriss.2024.8120139>.
- Amiruddin, S. & Soy, S. (2024). Online Instruction: a Revolutionary Phenomenon in the 21st Century Education in India. *International Journal For Multidisciplinary Research*, 6(1), 1-9. <https://doi.org/10.36948/ijfmr.2024.v06i01.13326>.
- Aybuyev, A. & Aybuev, A. (2025). Interactive teaching methods in primary school: impact on student performance and engagement. *Ekonomika I Upravljenje: Problemy, Resheniya*. <https://doi.org/10.36871/ek.up.p.r.2025.01.04.018>.
- Bahy, M., Ainin, M., Rosyidi, A., Rahman, A., Syaifullah, M. & Naf'an, A. (2024). Digitalization of arabic language textbook based on communicative learning to improve the linguistic competence of madrasah tsanawiyah students. *An Nabighoh*, 26(1), 67-78. <https://doi.org/10.32332/annabighoh.v26i1.67-78>.
- Beydoun, G., Low, G., Gill, A., Moniruzzaman, M. & Shen, J. (2024). Tailoring ontology retrieval for supporting requirements analysis. *Advanced Engineering Informatics*, 59, 102-231. <https://doi.org/10.1016/j.aei.2023.102231>.
- Chaganti, K., Ramula, U., Sathyanarayana, C., Changala, R., Kirankumar, N. & Gupta, K. (2023). UI/UX Design for Online Learning Approach by Predictive Student Experience. *2023 7th International Conference on Electronics, Communication and Aerospace Technology (ICECA)*1(3), 794-799. <https://doi.org/10.1109/ICECA58529.2023.10395866>.
- Cholidah, Z. & Muid, F. (2024). Inovasi Pembelajaran Nahwu dalam Kurikulum Bahasa Arab Modern. *Journal of Practice Learning and Educational Development*, 4(3), 184-189. <https://doi.org/10.58737/jpled.v4i3.352>.
- Cramer, K., Ross, C., Plant, L. & Pschibul, R. (2018). Efficacy of learning modules to enhance study skills. *International Journal of Technology and Inclusive Education*, 7(1), 1251-1259. <https://doi.org/10.20533/ijtie.2047.0533.2018.0153>.
- Dahlan, M., Halim, N., Kamarudin, N. & Ahmad, F. (2023). Exploring interactive video learning: Techniques, applications, and pedagogical insights. *International Journal of Advanced and Applied Sciences*, 10(12), 220-230. <https://doi.org/10.21833/ijaas.2023.12.024>.
- Dewi, N. & Qamariah, Z. (2023). The function and role of needs analysis in english learning curriculum. *Jurnal Ilmiah Multidisiplin*, 2(5), 116-123. <https://doi.org/10.56127/jukim.v2i02.708>.
- Ghodke, S. (2024). Educational Website. *Interantional Journal of Scientific Research in Engineering and Management*, 8(4), 1-5. <https://doi.org/10.55041/ijrem30832>.
- Gou, P. (2023). Teaching english using mobile applications to improve academic performance and language proficiency of college students. *Education and Information Technologies*, 28(12), 16935-16949. <https://doi.org/10.1007/s10639-023-11864-9>.
- Hidayati, N. (2021). Does e-learning content design affect student learning outcomes?. *SOCIA Jurnal Ilmu-Ilmu Sosial*, 17(2), 89-99. <https://doi.org/10.21831/SOCIA.V17I2.35571>.
- Huang, Z., Wang, M., Ling, F. & Chen, B. (2023). The Impact of Online Teaching Using Interactive Learning Methods on the Utilization of Learning Resources. *International Journal of Emerging Technologies in Learning*, 18(15), 148-160. <https://doi.org/10.3991/ijet.v18i15.41361>.

- Islamiah, Z. (2024). Desain strategi pembelajaran the firing line dalam pembelajaran bahasa arab. *Ta'limi: Journal of Arabic Education and Arabic Studies*, 3(2), 59-69. <https://doi.org/10.53038/tlmi.v3i2.101>.
- Lotfie, M., Zubir, B. & Ghalib, M. (2012). An assessment of the Arabic language programme for Human Sciences students at International Islamic University Malaysia.
- Lubis, M., Siregar, S. (2021). Optimization of personal website: solution for learning in the new normal era. *Journal of Physics: Conference Series*, 1779. 1-5. <https://doi.org/10.1088/1742-6596/1779/1/012040>.
- Manggala, M., Nyanasuryanadi, P., & Suherman, H. (2024). Innovative learning using e-modules. *JETISH: Journal of Education Technology Information Social Sciences and Health*, 3(1), 550-557. <https://doi.org/10.57235/jetish.v3i1.1983>.
- Memon, M., Lu, Y., Memon, A., Memon, A., Munshi, P., & Shah, S. (2022). Does the impact of technology sustain students' satisfaction, academic and functional performance: an analysis via interactive and self-regulated learning?. *Sustainability*, 14(12), 1-19. <https://doi.org/10.3390/su14127226>.
- Moldagali, M., Kazartsev, E., Abisheva, S., Sabirova, R., & Moldagaliyeva, R. (2023). The Usage of Educational Websites as A Didactic Tool in The Educational Process. *Pedagogy and Psychology*, 56(3), 65-71. <https://doi.org/10.51889/2960-1649.2023.15.3.007>.
- Muñoz-Losa, A., & Corbacho-Cuello, I. (2025, January). *Impact of interactive science workshops participation on primary school children's emotions and attitudes towards science*. <https://doi.org/10.1007/s10763-024-10539-2>.
- Ningrum, R., Widodo, W., & Sudibyo, E. (2024). The Influence of Website-Based Learning Media on Science Learning Outcomes in Elementary School Students in the Era of Society 5.0. *IJORE: International Journal of Recent Educational Research*, 5(1), 12-28. <https://doi.org/10.46245/ijorer.v5i1.445>.
- O'Bannon, B., Skolits, G., & Lubke, J. (2017). The influence of digital interactive textbook instruction on student learning preferences, outcomes and motivation. *Journal of Research on Technology in Education*, 49(3-4), 103-116. <https://doi.org/10.1080/15391523.2017.1303798>.
- Prytyka, O. (2023). The concept of interactive learning technologies. *Humanitarian Studios: Pedagogics, Psychology, Philosophy* 14(3), 76-80. <https://doi.org/10.31548/hspedagog>.
- Rizqi, M. (2024). Irtibat al-lughah al-klasiyyah wa al-lughah al-arabiyyah al-fusha al-mu'asarah wa ta'limiha. *Al-Fakkar: Jurnal Pendidikan Bahasa Arab*, 5(2), 116-128. <https://doi.org/10.52166/alf.v5i2.7290>.
- Sarah, S., Rizqia, A., Lisna, L., & Ali, M. (2024). Technology Integration in Arabic Language Skills Development in the Digital Era. *Al-Fusha : Arabic Language Education Journal*, 6(2), 74-81. <https://doi.org/10.62097/alfusha.v6i2.1735>.
- Shang, H., Sivaparthipan, C., & Vadivel T. (2022). Interactive teaching using human-machine interaction for higher education systems. *Computers and Electrical Engineering*, 100, 107811-107873. <https://doi.org/10.1016/j.compeleceng.2022.107811>.
- Tai, H. & Zhao, X. (2023). *Traditional arts and crafts elements and modern art design teaching relieve student attention deficit*. Cambridge University Press. <https://doi.org/10.1017/S1092852923003711>.
- Tarigan, W., Sipahutar, H. & Harahap, F. (2023). The impact of an interactive digital learning module on students' academic performance and memory retention. *Computers and Children*, 2(2), 1-6. <https://doi.org/10.29333/cac/13654>.
- Yusof, Y., Ayob, A., Saad, M., Affandi, H., & Hussain, A. (2020). Need analysis for the

- Development of a Microcontroller Instructional Module Programming Literacy. *Bulletin of Electrical Engineering and Informatics*, 9(2), 507-513. <https://doi.org/10.11591/EEI.V9I2.2077>.
- Zaki, M., Ismail, U., Radzi, A. & Pital, N. (2024). Teaching methods of arabic language grammar lessons among arabic teachers at religious secondary schools in malaysia. *Theory and Practice in Language Studies*, 14(10), 3100-3108. <https://doi.org/10.17507/tpls.1410.11>.
- Zuki, R., Razali, N., Sharani, D., & Razali, S. (2024). Needs analysis of basic module content for problem-based learning approach. *International Journal of Modern Education*, 6(20), 294-304. <https://doi.org/10.35631/ijmoe.620023>.