

Needs Analysis for the Design and Development of the Digital Nahw Adventure Module in Arabic Grammar Learning

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ABSTRACT

Modern technological advancements have greatly assisted students in understanding Arabic grammar more easily and enjoyably. Various forms of multimedia can be utilized to address the challenges of a passive and one-way teaching and learning (T&L) process. In this regard, an adventure narrative-based approach is seen as a fresh and innovative idea worth introducing, as it has the potential to make learning content more engaging while stimulating students' interest and involvement in mastering grammatical aspects often perceived as overly complex. Accordingly, this needs analysis study was conducted to examine students' perceptions on the need to design and develop a digital adventure module for Arabic grammar learning. Grounded in the Design and Development Research (DDR) approach, the study is supported by several models and theories, including the Discrepancy Model, Sidek Module Development Model (2005), Scenario-Based Learning (SBL) Model, Cognitivism and Constructivism theories. The study comprises two main phases: the needs analysis phase and the design and development phase. The needs analysis phase involved 100 Bachelor of Arabic Studies students at Universiti Sultan Zainal Abidin (UniSZA) who had registered in the Applied Arabic Grammar course. Data were collected via questionnaire and analyzed descriptively using the Statistical Package for the Social Sciences (SPSS), yielding mean and standard deviation values. The instrument covered existing Arabic grammar learning materials, learning challenges, inclination toward interactive digital learning, the need for a digital adventure module, as well as relevant design and development components. The findings indicate a high level of need for the development of an adventure narrative-based module based on students' perceptions. Developing such an innovative adventure module is crucial in fostering deeper understanding and enriching the textbook-based T&L process, which is more creative and effective.

Keywords: Needs analysis; Design and Development Research (DDR); digital adventure module; adventure narrative; Arabic grammar; technology application

INTRODUCTION

Language serves as a fundamental medium of communication in human life, enabling individuals to convey and comprehend information effectively. Every language operates within a system of linguistic rules that must be mastered to ensure accurate communication and prevent misunderstandings (Mohd et al., 2025). Among the world's major languages, Arabic occupies a prominent position, with approximately 470 million speakers worldwide. It is recognised as an official language in 22 countries and is one of the six official languages of the United Nations (UN) (Rizqi, 2024). The significance of Arabic is further reinforced by its status as the language of the Holy Quran and the Hadith of Prophet Muhammad (PBUH), highlighting its religious, cultural and educational importance. Consequently, promoting effective Arabic language learning remains a key educational priority. The primary objective of language learning is to enable learners to use language accurately and effectively across various communicative contexts (Hamid et al., 2020).

Grammar constitutes an inseparable element of the Arabic language learning process. Arabic grammar, commonly referred to as syntax, plays a crucial role in regulating sentence structure, word arrangement and the accurate conveyance of meaning (Jaffar & Sha'ari, 2016). A solid understanding of Arabic grammar enables

learners to construct grammatically accurate sentences and contributes significantly to overall language proficiency (Abdallah & Noor, 2025). Conversely, inadequate grammatical competence has been recognised as one of the primary factors contributing to learners' poor proficiency in Arabic. This issue warrants serious attention, as language mastery encompasses four interrelated skills: listening, speaking, reading and writing. Effective performance in each of these skills is closely associated with a sound understanding of grammatical principles.

Arabic has long been an integral part of the Malaysian education system, with its instruction being continuously implemented from primary school through higher education institutions (Saad et al., 2021). At the tertiary level, Arabic is offered both as a core subject in Islamic studies programmes and as an elective course in various academic disciplines (Lotfie et al., 2012). Despite its established position, the teaching and learning of Arabic grammar continue to rely heavily on traditional instructional approaches. These approaches include lecture-based teaching, memorization, repetition and translation methods that are predominantly teacher-centred (Zaki et al., 2024). Excessive dependence on teacher explanations and textbooks often limits student participation during teaching and learning sessions. Such passivity often limit students' active participation and reduce opportunities for meaningful engagement with grammatical concepts, particularly among non-native Arabic learners (Islamiah, 2024).

In addition to instructional practices, the inherent complexity of Arabic grammar presents considerable learning challenges. Learners are expected to master numerous grammatical concepts and rules simultaneously, making it difficult to distinguish between grammatical structures, retain newly acquired knowledge and apply grammatical principles accurately. Lengthy explanations and information-dense learning materials may further increase cognitive load, while large classroom settings often restrict lecturers' ability to monitor students' individual understanding. These challenges indicate the need for instructional approaches that are more engaging, interactive and responsive to students' learning needs (Gampala, 2023). Furthermore, the integration of digital technology into teaching and learning has been shown to improve students' motivation, engagement and overall learning experiences (Ab Rahman & Kasim, 2025), suggesting that technology can play a significant role in enhancing Arabic grammar instruction. Such integration can also create a more dynamic and stimulating learning environment. Consequently, technology should be utilized optimally to support more effective Arabic language learning.

One promising strategy is the development of a digital module that promotes structured, interactive and self-directed learning. Well-designed learning modules enable students to progress systematically while supporting independent learning. Previous studies have demonstrated that learning modules can improve academic achievement, motivation and students' interest in learning (Cramer et al., 2018). Likewise, Manggala et al. (2024) reported that modules organised with clear and systematic content facilitate learners' understanding of complex concepts. Rabindarang (2025) further emphasised that effective module development should consider learners' proficiency levels, learning needs and course objectives to maximise learning outcomes. In addition, learning modules are aligned with the development of 21st-century learning competencies, which emphasise critical thinking, communication, collaboration and problem-solving skills (Dahlan et al., 2023). Accordingly, a digital adventure module has the potential to provide a more engaging and learner-centred learning environment while addressing the limitations of conventional Arabic grammar instruction.

Although numerous studies have explored digital learning technologies and instructional module development, relatively limited attention has been given to the development of a digital adventure module specifically designed for Arabic grammar learning, particularly within the Malaysian higher education context. Existing studies have largely focused on teaching strategies, digital technologies, or general module development, with limited empirical evidence regarding students' actual learning needs, preferences and design requirements for such a module. Consequently, a comprehensive needs analysis is necessary to ensure that the proposed module is pedagogically appropriate, learner-centred and aligned with learners' expectations and instructional requirements.

Accordingly, this study was conducted to identify students' needs regarding the development of a digital adventure module for Arabic grammar learning. As the preliminary phase of the Design and Development Research (DDR) approach, the findings are expected to provide empirical evidence to guide the design and development of a systematic, relevant and learner-centred digital adventure module that enhances Arabic grammar learning.

METHODOLOGY

This study employed the Design and Development Research (DDR) approach as the principal framework for guiding the development of the proposed instructional module. DDR, as defined by Richey et al. (2004; 2005) and cited in Amiruddin et al. (2021), refers to a systematic research methodology concerned with the design, development and evaluation of educational products or specific components. It also involves an examination of the development process itself, the impact of instructional design decisions and the implementation of the developed product by its intended users. Due to its structured and systematic nature, DDR is widely recognised in educational research as an effective approach for producing contextually relevant instructional innovations.

Within the DDR framework, the needs analysis phase represents the initial and critical stage prior to the design and development processes. This phase involves the systematic collection of information to identify the current needs of the target population and to determine the specifications of the product to be developed. In educational research, needs analysis is essential for evaluating existing learning materials and providing justification for the development of improved instructional solutions that better align with learners' requirements (Salleh et al., 2020). Furthermore, It also ensures that the resulting product is relevant to current learning challenges and capable of enhancing learning effectiveness (Ali & Mahamod, 2017).

Branch (2009) outlined several key activities involved in the needs analysis phase, including validating the existence of a performance gap, determining instructional goals, identifying learners' needs, establishing the required resources and preparing a project management plan. Consequently, needs analysis is regarded as the cornerstone of any design and development study, as the findings obtained during this phase serve as the foundation for subsequent design decisions. Sakumoning and Masnan (2024) emphasized that needs analysis is the most critical phase in development research because the content and structure of the product are largely determined by the information gathered during this stage. Likewise, Masliza and Nor'ain (2021) argued that conducting a comprehensive needs analysis helps ensure that the objectives of the product development process are clearly defined and aligned with the requirements of the target users.

In the present study, a needs analysis was conducted to obtain students' perspectives as the basis for developing the Digital Nahw Adventure Module. The module was designed based on the Applied Arabic Grammar (*Tatabahasa Arab Terapan, TAT*) course, a compulsory course offered to Bachelor of Arabic Language Studies students at Universiti Sultan Zainal Abidin (UniSZA) during their first and third semesters. The findings obtained from this phase were subsequently utilized to guide the determination of the module's content, design and learning features. To accomplish this phase, a questionnaire was employed as the primary data collection instrument. The questionnaire enabled the researchers to gather respondents' views regarding the challenges they encountered in learning Arabic grammar as well as their perceived need for a learning module to address those challenges. The instrument was specifically developed and adapted according to the objectives and requirements of the study before being distributed online to the respondents.

The questionnaire used in this study was a structured instrument adapted from a design and technology research questionnaire. It consists of six sections: Section A covers demographic information, while Sections B, C, D, E and F comprise five-point Likert scale items ranging from (1) Strongly Disagree, (2) Disagree, (3) Unsure, (4) Agree to (5) Strongly Agree. These sections address the use of existing Arabic grammar learning materials, challenges associated with current learning approaches, students' preferences toward interactive digital learning, the need for a Digital Nahw Adventure Module in the learning process and requirements related to the module's features and design. Prior to its administration, the questionnaire underwent content validation by three experts and was pilot tested with 30 respondents. The pilot study yielded a Cronbach's Alpha coefficient exceeding 0.90, indicating that the instrument possessed excellent reliability.

A total of 100 undergraduate students enrolled in the Bachelor of Arabic Language Studies programme at UniSZA participated in this study. In terms of demographic distribution, the respondents consisted of 27 male students and 73 female students, as well as 18 first-year students and 82 second-year students. They were selected using purposive sampling, which refers to the deliberate selection of participants based on specific characteristics aligned with the objectives of the study (Nyimbili & Nyimbili, 2024). This technique is particularly appropriate when participants are required to possess relevant knowledge and experience related to the phenomenon under

investigation. Accordingly, these students were selected because they had completed the Applied Arabic Grammar (TAT) course during their first and third semesters, which directly corresponds to the focus of the proposed module development.

Data were processed and analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, specifically mean scores and standard deviations, were used to determine students' perceived needs for the Digital Nahw Adventure Module in Arabic grammar learning. The interpretation of mean scores was adapted from the scale proposed by Nunnally and Bernstein (1994), as presented in Table 1. Higher mean scores indicate that a particular element is perceived as more important and necessary by the respondents.

Table 1. Mean Interpretation Value

Mean Score	Interpretation
1.00 – 2.00	Low
2.01 – 3.00	Moderate
3.01 – 4.00	Moderately High
4.01 – 5.00	High

Source: Nunnally and Bernstein (1994)

FINDINGS

Use of Arabic Grammar Learning Materials

The analysis presented in this section focuses on students' use of Arabic grammar learning materials. Table 2 reports the mean scores, standard deviations and overall interpretation for each item.

Table 2. Use of Arabic Grammar Learning Materials

	B: Use of Arabic Grammar Learning Materials	Mean	SD	Interpretation
B1	I use the main reference book to learn Arabic grammar (nahw).	4.22	.848	High
B2	I use additional reference books to help deepen my understanding of topics.	4.00	.953	Moderately High
B3	I refer to library materials to explore Arabic grammar discussions further.	3.40	1.101	Moderately High
B4	I refer to online sources for additional explanations.	4.36	.718	High
B5	I use digital devices (computers, tablets, smartphones) for learning.	4.47	.688	High
B6	I use support materials (slides or notes) provided by lecturers.	4.40	.791	High
B7	I use self-prepared summary notes.	4.06	.930	High
B8	I use learning applications or software.	4.14	.779	High
B9	I use digital modules in learning Arabic grammar.	4.17	.766	High
B10	I use websites or interactive learning platforms.	4.10	.847	High
	Average	4.132	.842	High

The findings indicate that the overall use of Arabic grammar learning materials among respondents is at a high level, with a mean score of 4.132 and a standard deviation of .842. This suggests that students actively utilise a variety of learning resources to support their understanding of Arabic grammar. The highest mean score was recorded for the use of digital devices such as computers, tablets and smartphones in learning (Mean = 4.47, SD = .688). This was followed by the use of instructional materials provided by lecturers, such as slides and notes (Mean = 4.40, SD = .791), as well as online resources for additional explanations (Mean = 4.36, SD = .718). Other frequently used resources include main reference books (Mean = 4.22, SD = .848), digital modules (Mean = 4.17, SD = .766), learning applications or software (Mean = 4.14, SD = .779), interactive learning platforms (Mean = 4.10, SD = .847) and self-prepared notes (Mean = 4.06, SD = .930). Two items recorded moderately high levels, namely the use of supplementary reference books (Mean = 4.00, SD = .953) and library resources

(Mean = 3.40, SD = 1.101). Overall, the results demonstrate that students tend to rely more on digital and easily accessible learning resources compared to traditional library-based materials.

Challenges in Learning Approaches

This section examines the challenges faced by students in learning Arabic grammar. Table 3 presents the mean scores, standard deviations and overall interpretation of the items.

Table 3. Challenges in Learning Approaches

	C: Challenges in Learning Approaches	Mean	SD	Interpretation
C1	Traditional teaching methods that rely solely on lectures and notes are insufficient for mastering Arabic grammar.	3.65	1.104	Moderately High
C2	Difficulty in communicating with lecturers and peers outside of class.	3.25	1.158	Moderately High
C3	Limited class time restricts my opportunity to understand nahw topics in depth.	3.61	.994	Moderately High
C4	An overly packed syllabus makes it difficult for me to understand each topic thoroughly.	3.76	1.016	Moderately High
C5	Insufficient examples and explanations to understand a given topic.	3.60	1.035	Moderately High
C6	The learning materials provided are insufficiently engaging and interactive.	3.16	1.080	Moderately High
C7	The cost of obtaining additional reference materials in physical form is too high.	3.60	1.082	Moderately High
C8	Limited availability of electronic learning materials on the internet.	3.27	1.053	Moderately High
C9	No digital teaching aids are used to support Arabic grammar learning.	3.00	1.146	Moderate
	Average	3.433	1.074	Moderately High

The findings reveal that the overall level of challenges is moderately high, with a mean score of 3.433 and a standard deviation of 1.074. This indicates that students encounter several difficulties during the learning process of Arabic grammar. The most significant challenge reported was the extensive syllabus, which makes it difficult for students to achieve in-depth understanding of each topic (Mean = 3.76, SD = 1.016). This was followed by reliance on traditional teaching methods that depend mainly on lectures and notes, which are perceived as insufficient for mastering Arabic grammar (Mean = 3.65, SD = 1.104). Limited instructional time was also identified as a constraint in achieving comprehensive understanding of Nahw topics (Mean = 3.61, SD = .994). Other challenges include insufficient examples and explanations (Mean = 3.60, SD = 1.035), high cost of printed reference materials (Mean = 3.60, SD = 1.082), lack of accessible online learning materials (Mean = 3.27, SD = 1.053), difficulties in communicating with lecturers and peers outside class (Mean = 3.25, SD = 1.158) and less engaging learning materials (Mean = 3.16, SD = 1.080). The lowest-rated item was the lack of digital teaching aids supporting Arabic grammar learning (Mean = 3.00, SD = 1.146), although it still falls within the moderate level.

Inclination Toward Interactive Digital Learning

This section presents the analysis of students' inclination toward interactive digital learning in their courses. Table 4 shows the mean scores, standard deviations and overall interpretation.

Table 4. Inclination Toward Interactive Digital Learning

	Table 4. Inclination Toward Interactive Digital Learning	Mean	SD	Interpretation
D1	I am interested in using digital technology in the learning process.	4.43	.714	High
D2	I find it easier to understand learning through visual and interactive materials.	4.42	.699	High
D3	I enjoy learning delivered through storytelling elements or everyday life situations.	4.33	.779	High
D4	I am interested in learning with adventure or mission-based elements.	4.28	.766	High

D5	I enjoy learning that incorporates videos, graphics and quizzes.	4.40	.682	High
D6	I feel more motivated when learning is delivered interactively.	4.38	.678	High
D7	I find it easier to focus when learning uses engaging digital materials.	4.39	.650	High
D8	I prefer learning materials with attractive layout and typography.	4.44	.656	High
Average		4.384	.703	High

The findings in Table 4 indicate that students' inclination towards interactive digital learning was at a high level, with an overall mean of 4.384 and a standard deviation of .703. These findings confirm that students proved an incredibly positive reception towards the use of digital technology and interactive learning approaches. The item recording the highest mean score was a preference for learning materials with attractive layout and typography (Mean = 4.44, SD = .656), followed by interest in using digital technology in learning (Mean = 4.43, SD = .714) and a tendency to understand learning better through visual and interactive materials (Mean = 4.42, SD = .699). Students also expressed a high level of agreement regarding learning materials that include videos, graphics and quizzes (Mean = 4.40, SD = .682), improved focus through engaging digital content (Mean = 4.39, SD = .650) and increased motivation through interactive learning (Mean = 4.38, SD = .678). Furthermore, students also expressed interest in learning that incorporates storytelling elements or real-life situations (Mean = 4.33, SD = .779) and mission-based or adventure-style learning activities (Mean = 4.28, SD = .766). Overall, all items were rated highly, indicating a strong preference for interactive and multimedia-based learning.

Need for the Use of a Digital Adventure Module

This section presents the findings of the analysis regarding the need for the use of a digital adventure module based on respondents' feedback. Table 5 shows the mean scores and standard deviations for each item, as well as the overall average for the construct examined.

Table 5. Need for the Use of a Digital Adventure Module

	E: Need for the Use of a Digital Adventure Module	Mean	SD	Interpretation
E1	I believe the digital adventure module makes learning content easier to understand.	4.24	.740	High
E2	I believe the digital adventure module makes information more interesting and interactive.	4.29	.743	High
E3	I believe the digital adventure module can enhance creative thinking.	4.25	.757	High
E4	I believe the digital adventure module strengthens my understanding in learning.	4.28	.726	High
E5	I believe the digital adventure module helps me remember learning concepts more easily.	4.29	.743	High
E6	I believe the digital adventure module increases my level of focus during learning.	4.27	.737	High
E7	I believe the digital adventure module makes the learning process faster and more efficient.	4.26	.787	High
E8	I believe the digital adventure module increases my motivation to learn.	4.25	.744	High
E9	I believe the digital adventure module makes learning more enjoyable.	4.29	.756	High
E10	I believe learning through the digital adventure module is more effective.	4.22	.773	High
Average		4.264	.751	High

Table 5 shows that the interpretation of data indicates that students' perceptions of the need for the digital adventure module in learning are at a high level, with an overall Mean score of 4.264 and a standard deviation of .751. This result demonstrates that students agree that the digital adventure module is needed in learning due to its positive impact on the learning process. All items recorded high Mean scores. The highest Mean scores were the digital adventure module makes information more interesting and interactive (Mean = 4.29, SD = .743), helps me remember concepts more easily (Mean = 4.29, SD = .743) and makes learning more enjoyable (Mean = 4.29, SD = .756). This was followed by strengthens my understanding of learning (Mean = 4.28, SD = .726), increases focus during learning (Mean = 4.27, SD = .737), makes the learning process faster and more efficient (Mean = 4.26, SD = .787), enhances creative thinking (Mean = 4.25, SD = .757), increases motivation to learn (Mean =

4.25, SD = .744) and makes learning easier to understand (Mean = 4.24, SD = .740). The lowest Mean score was recorded for learning through the digital adventure module is more effective (Mean = 4.22, SD = .773), although it remains at a high level.

Required Design Aspects of the Digital Adventure Module

This section presents an analysis of the items used to elicit respondents' views on the design features needed for the digital adventure module. Table 6 reports the mean scores and standard deviations for each item, alongside the overall average for the construct under study.

Table 6. Required Design Aspects of the Digital Adventure Module

	F: Required Design Aspects of the Digital Adventure Module	Mean	SD	Interpretation
F1	The content of the learning module should be presented concisely and in an organized manner.	4.38	.678	High
F2	The explanation of grammar concepts in the digital adventure module should be easily understood by students.	4.43	.640	High
F3	The learning content in the digital adventure module should be accurate and aligned with the course objectives.	4.42	.669	High
F4	The choice of Arabic and Rumi script in the digital adventure module should be clear and easy to read.	4.44	.686	High
F5	The use of colours, icons and graphics in the module should be attractive and suited to learning needs.	4.47	.658	High
F6	The digital adventure theme should be appropriate to the grammar topics being studied.	4.40	.778	High
F7	The module's layout should be neat and systematic to facilitate user navigation.	4.46	.688	High
F8	Interactive elements such as storytelling, missions, visuals and quizzes should be diversified to meet active learning needs.	4.44	.671	High
F9	The audio pronunciation of terms in the digital adventure module should be clear and of high quality.	4.45	.657	High
F10	The digital adventure module should be user-friendly and easily accessible across multiple devices.	4.48	.659	High
	Average	4.437	.678	High

The data interpretation in Table 6 indicates that the required design aspects of the digital adventure module are at a high level, with an overall mean score of 4.437 and a standard deviation of .678. This finding demonstrates that students emphasize the need for a module design that is clear, systematic and user-friendly. All items recorded high mean scores. The item with the highest mean score was the digital adventure module should be user-friendly and accessible across multiple devices (Mean = 4.48, SD = .659), followed by the use of colours, icons and graphics should be attractive and appropriate (Mean = 4.47, SD = .658) and the interface layout should be neat and systematic (Mean = 4.46, SD = .688). This was followed by pronunciation audio of terms in the module should be clear and of high quality (Mean = 4.45, SD = .657), Arabic and Roman scripts should be clear and easy to read (Mean = 4.44, SD = .686) and interactive elements should be diversified (Mean = 4.44, SD = .671). Other items also recorded high mean values, including clear conceptual explanations (Mean = 4.43, SD = .640), content accuracy aligned with course objectives (Mean = 4.42, SD = .669), suitability of theme to topics (Mean = 4.40, SD = .778) and content that is concise and well organized (Mean = 4.38, SD = .678).

DISCUSSION

The results of this descriptive analysis revealed a high level of engagement with Arabic grammar learning materials among students, with digital devices including computers, tablets and smartphones emerging as the most commonly relied upon resources. This indicates a growing tendency among students to incorporate digital technology into their studies, driven by its convenience, accessibility and capacity to support learning regardless of time or location constraints (Bakar, 2020). This trend aligns with the findings of Seyidov and Çitil (2024), who

noted that students increasingly supplement traditional resources such as textbooks with digital modules, mobile devices and visual aids to enhance their learning experience. Notably, materials provided by lecturers, including slides and notes, along with online resources, were also heavily utilized.

From a constructivist perspective, these findings suggest that learners actively construct their understanding by integrating multiple sources of input rather than relying on a single authoritative resource. The preference for digital and lecturer-provided materials reflects a learner-centred knowledge construction process, where meaning is continuously negotiated through accessible and multimodal learning inputs. This supports the need for a learning environment that facilitates active knowledge construction through structured yet flexible digital resources. In contrast, library resources received comparatively less attention than other learning materials, indicating a clear preference for resources that are readily accessible online. These results therefore highlight the importance of designing a digital learning module that responds to students' current learning preferences, one that is accessible to both students and lecturers, engaging and interactive and that more effectively supports mastery of Arabic grammar.

In addition, the difficulties students face in learning Arabic grammar further support the need for such a module. Findings showed strong agreement that an overly extensive syllabus, combined with heavy reliance on lecture and note-based teaching methods, were major obstacles preventing deeper understanding. These conditions may lead to cognitive overload, which in turn reduces students' interest and motivation to participate actively in learning. This aligns with the principles of the Sidek Module Development Model, which emphasizes systematic organization of content to ensure gradual progression and reduced cognitive burden. A well-structured module is therefore essential to scaffold learning in a way that aligns with students' cognitive readiness. As a result, learning materials that incorporate visual and interactive components could help address these challenges by presenting complex content in a clearer, more structured and more accessible form. Additional difficulties such as limited class time, insufficient examples and explanations, the high cost of printed references, limited availability of digital resources online, challenges in contacting lecturers outside class hours and the absence of comprehensive digital teaching tools further underscore the need for a strong supplementary learning resource.

With respect to students' interest in interactive digital learning, the findings show a high level of preference for this approach. This reflects how contemporary learners have become increasingly accustomed to integrating technology into nearly every aspect of their lives, including education. Students indicated that they understood content more effectively when it was presented in visual and interactive formats and demonstrated a clear preference for digital tools as their primary learning medium. Elements such as videos, graphics and quizzes were perceived as enhancing both engagement and motivation (Rosli et al., 2021). These findings strongly support the Scenario-Based Learning (SBL) framework, as students expressed a clear preference for storytelling, real-life contexts and mission- or adventure-based learning activities. SBL emphasizes contextualized learning experiences where knowledge is acquired through meaningful scenarios rather than isolated content delivery. The high acceptance of interactive storytelling (Mean = 4.33) therefore empirically validates the suitability of SBL as a guiding pedagogical approach for the proposed module.

Students further indicated that a digital adventure module could enhance their motivation while supporting a deeper understanding of course concepts. This reflects the effectiveness of integrating structured instructional sequencing (Sidek Model) with contextual learning environments (SBL), enabling both systematic content progression and meaningful engagement. Despite the breadth of topics in Arabic grammar, presenting content in a clear and well-structured format enables students to follow the material more effectively. A structured learning design also helps reduce the burden associated with an extensive syllabus. The digital adventure module, moreover, has strong potential to enhance students' focus, creativity and interest while improving the efficiency of the learning process. Concepts that previously required considerable time to understand can be grasped more quickly through clear and systematic explanations. The proposed module thus serves as an educational tool designed to help students understand, retain and apply Arabic grammar concepts in authentic learning contexts.

In terms of the digital adventure module's design, all proposed elements were rated as highly important by students. They preferred content that is clear, concise and logically organized, supported by appropriate visual elements such as colours, icons and graphics aligned with the topics covered. Usability was also emphasized, including compatibility across multiple digital devices, intuitive functionality and a well-structured interface.

Additional features considered important included readable typography, clear audio quality and a range of interactive activities. Taken together, these findings suggest that the module design should integrate three core elements, namely content clarity, usability and interactivity, to create a more effective and engaging learning experience for Arabic grammar.

CONCLUSION

In conclusion, the findings of the needs analysis demonstrate that the development of a digital adventure module for Arabic grammar learning is both relevant and necessary from the students' perspective. All constructs examined recorded moderate-to-high levels, indicating positive acceptance of and a strong need for the integration of such a module into the learning process. These findings will directly inform the next phase of the Design and Development Research (DDR) cycle, in which the identified needs will be translated into specific design requirements guiding the development of the Digital Nahw Adventure Module, particularly in terms of content organisation, instructional strategies and interactive features. The proposed digital adventure module will emphasize an intuitive, interactive and user-friendly design. Its content will be carefully structured to be concise, accurate and aligned with the topics outlined in the Applied Arabic Grammar course syllabus. Accordingly, elements such as narrative storytelling, mission-based learning activities, quizzes, visual aids and structured learning pathways will be systematically embedded based on the needs analysis, ensuring that the final module is firmly grounded in empirical data and aligned with DDR principles to enhance students' understanding, motivation and active engagement in learning Arabic grammar.

REFERENCES

1. Ab Hamid, S. M. A. S., Mohamad, A. H., Kamis, M. S., Lubis, M. A., & Arriffen, A. M. (2017). Kelemahan pelajar-pelajar Sekolah Menengah Kebangsaan Agama (SMKA) dan Sekolah Agama Menengah (SAM) dalam penguasaan topik terpilih dalam tatabahasa Arab. *ASEAN Comparative Education Research Journal on Islam and Civilization (ACER-J)*, 1, 67–78.
2. Ab Rahman, F. N., & Kasim, M. R. (2025). Penerimaan murid terhadap pembelajaran berasaskan permainan dalam pengajaran Bahasa Melayu di sekolah menengah daerah Tumpat, Kelantan. *Perspektif Jurnal Sains Sosial dan Kemanusiaan*, 17(2), 52–61.
3. 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.
4. Ali, A., & Mahamod, Z. (2017). Analisis keperluan terhadap pengguna sasaran modul pendekatan berasaskan bermain bagi pengajaran dan pembelajaran kemahiran bahasa kanak-kanak prasekolah. *JuKu: Jurnal Kurikulum & Pengajaran Asia Pasifik*, 3(1), 1–8.
5. Amiruddin, A. Z., Halim, Z. A., & Zainuddin, N. (2021). Reka bentuk dan pembangunan pembelajaran Bahasa Arab dalam talian. *e-Jurnal Bahasa dan Linguistik (e-JBL)*, 3(1), 18–30.
6. Bakar, S. B. A. (2020). Keberkesanan kaedah pengajaran berasaskan teknologi mudah alih di kalangan guru Pendidikan Islam dalam meningkatkan mutu pengajaran dan pembelajaran. Tesis PhD: Universiti Malaysia Pahang.
7. Branch, R. M. (2009). *Instructional design: The ADDIE approach*. Springer.
8. 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>
9. 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.
10. Gampala, M. (2023). Innovative approaches to teaching and learning. *Shanlax International Journal of English*, 12(1), 138–145.
11. Hamid, M. F. B. A., Osman, N. B., Halim, Z. B. A., Yahaya, M. F. B., Nasir, M. S. B., Sha'ari, S. H. B., & Rahman, N. E. B. A. (2020). Need analysis for infographic application in Arabic grammatical learning. *Universal Journal of Educational Research*, 8(3), 936–941.
12. Islamiyah, Z. I. (2024). Desain strategi pembelajaran *The Firing Line* dalam pembelajaran Bahasa Arab. *TA'LIMI | Journal of Arabic Education and Arabic Studies*, 3(2), 59–69.

13. Jaffar, M. N., & Sha'ari, A. (2016). i-MAJRURAT website usage as Arabic grammar teaching aid. *al-Qanatr: International Journal of Islamic Studies*, 3(1), 1–9.
14. Lotfie, M., Zubir, B. & Ghalib, M. (2012). An assessment of the Arabic language programme for Human Sciences students at International Islamic University Malaysia.
15. 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>
16. Masliza, S. R., & Nor'ain, M. T. (2021). Analisis keperluan untuk membangunkan modul pembelajaran berasaskan challenge dalam mempelajari matematik bagi murid Tingkatan 4. *Jurnal Pendidikan Sains dan Matematik Malaysia*, 11(Special Issue), 50–58.
17. Mohd, S. N. A. B. S., & Ghani, M. T. A. (2025). Persepsi pelajar terhadap kepentingan tatabahasa Arab dalam meningkatkan kemahiran membaca di Universiti Pendidikan Sultan Idris. *Malaysian Journal of Islamic Studies*, 9(2), 1–11.
18. Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.
19. Nyimbili, F., & Nyimbili, L. (2024). Types of purposive sampling techniques with their examples and application in qualitative research studies. *British Journal of Multidisciplinary and Advanced Studies: English Language, Teaching, Literature, Linguistics & Communication*, 5(1), 90–99.
20. Rabindarang, S. (2025). Penggunaan modul pengajaran dan pembelajaran secara digital bagi memperkasakan PdPc dalam program teknologi pembinaan. *Journal on Technical and Vocational Education*, 10(2), 706–721.
21. 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>
22. Rosli, A. H., Wahab, N. A., Alsagoff, S. N., Isa, M. R. M., & Shukran, A. M. (2021). Students' preferences of learning materials during unprecedented online learning due to COVID-19. *Malaysian Journal of Computer Science*, 38–44.
23. Saad, D. U. M., Bakar, H. R. A., Shaharuddin, H. N., & Amran, S. N. A. B. (2021). Analisis kesalahan morfologi penulisan akademik Bahasa Arab terhadap pelajar bukan penutur jati: Kajian korpus. *e-Jurnal Bahasa dan Linguistik (e-JBL)*, 3(1), 43–55.
24. Sakumoning, R., & Masnan, A. H. (2024). Analisis keperluan terhadap pembangunan modul nyanyian membentuk tingkah laku kanak-kanak. *EDUCATUM Journal of Social Sciences*, 10(2), 49–56. <https://doi.org/10.37134/ejoss.vol10.2.5.2024>
25. Salleh, M. N. M., Hussin, Z., & Mohamed, M. F. (2020). Analisis keperluan pembangunan model pengajaran taranum al-Quran: Satu kajian penerokaan. *JuKu: Jurnal Kurikulum & Pengajaran Asia Pasifik*, 8(3), 27–38.
26. Seyidov, R., & Çitil, A. (2024). The impacts of contemporary educational technologies on learning Arabic. *Evolutionary Studies in Imaginative Culture*, 9(1), 81–92.
27. Zaki, M. F. M., Ismail, U. S., Radzi, A. H. M., & Pisal, N. A. (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.