

The Smart Platform for Understanding the Extraordinary of the Qur'an

Khalid Ali Almarhabi

kamarhabi@uqu.edu.sa

Umm Al-Qura University, College of Computing at Alqunfudah, Saudi Arabia

Summary

The Qur'an is regarded as the holy book by Islam followers; they assert that God wants humankind to understand its meanings and implement best practices. Numerous individuals have attempted to understand the meaning of its verses and explore its Extraordinary Vocabulary; however, few people successfully studied and researched the different meanings of that holy text. Only a limited segment of the society comprising scholars, students, and intellectuals have grasped the teachings of the Qur'an. A majority of the general population, specifically youngsters, spend ample time using mobile phones. In this context, many innovative educational platforms have recently been launched to attract the general public to learn and use knowledge. Research has provided the positive impact of such smart platforms. This concept is about an innovative smartphone platform to help users understand and reason the Qur'an by helping with the book vocabulary explained by expert scholars. This work proposes creating an engaging digital format using innovative technologies. This idea is inspired by youngsters who demonstrate an immense interest in online learning. Qur'an vocabulary is the prerequisite to building a better understanding that allows users to get precise meaning.

Keywords: *Extraordinary Vocabulary, Holy Qur'an, Understanding, Reasoning, Artificial Intelligence*

1. Introduction

Having a solid understanding and dedication to the Qur'an helps individuals do good deeds. A quote from the Qur'an reads, "Allah selects messengers from both angels and people, for Allah is truly All-Hearing, All-Seeing" (75). "He knows what is ahead of them and what is behind them. And to Allah 'all' matters will be returned 'for judgment' (76) O believers! Bow down, prostrate yourselves, worship your Lord, and do 'what is' good so that you may be successful." (77) Al-Hajj (22).

Investing in education is among the most significant investments humans ever make. Educating people to learn the holy text of the Qur'an helps people live better. Reading and understanding the Qur'an is an obligation and a psychological need. Efforts towards fulfilling obligations are more important than fulfilling other requirements. This concept can be extended to the education domain, where the community, state, and charitable institutions work to fulfil a goal.

The idea of serving the Holy Qur'an started during the Prophet Muhammed Era and continues until today. The prophet's companions documented and gathered the verses; however, the efforts of understanding the meaning of the Qur'an are still underway. Most efforts were using traditional technics and directed towards recording and documenting rather than using modern technology to aid understanding and learning concerning new technologies like AI, cloud computing, and new learning techniques.

Research Concept: A platform comprising hardware, operating system, web browser, and other software. This platform comprises a website and smartphone applications for different environments, aiming to help users reason and understand the Qur'an, follow the meanings explained by scholars specialised in interpreting the Qur'an. Recent research concerning different learning techniques and modern technology makes learning easy, interactive, and interesting.

2. Related Work

It is crucial to know the vocabulary to understand a specific text. Individuals who do not understand a single vocabulary will not comprehend sentences or reason the meaning. The impact could be worse if individuals misunderstand text and create an opposing view, leading to the wrong path [1].

The linguistic study is the first step to learning Qur'anic aspects. It is critical to learn and understand the singular vocabulary that constitutes the structure of the Holy Qur'an and represents the collective Islamic knowledge.

Application importance summary:

- Creating a strong association between individuals' reality the Holy Qur'an and The Prophet's teachings. The community is facing hardships, and guidance from Qur'an can help them.
- Enhancing the understanding level of the Holy Qur'an. Considering that a random test was administered to an ordinary individual on the

following words, the common understanding might be different from the real meaning specified in the following table [3]:

Table 1: Illustration of Common and Actual Meanings of Qur'anic Text

No.	Word	Common Meaning	Actual Meaning
1	Al- Maoun	Utensils	Aids like money and material possessions that help people live.
2	Faommoho	One's mother	An individual's forehead falling in hell
3	Alkhayr	Good deeds	Money
4	Sumkuha	Thickness	Ceiling and Height

- Using experiments and research of understanding effective vocabulary in different languages.
- Creating a challenging and competitive environment using application messages and notifications, self-paced learning using individual and group tests, offering certificates, and awarding individuals who complete all tests (similar to awards provided to content creators on YouTube when they achieve specific milestones).
- Facilitating an enjoyable experience using different presentation styles, passing phases successfully, and using attractive design.
- Continuous vocabulary study and revision
- Accommodating individual requirements, learning capabilities, and levels.

The existing literature comprises extensive research and books about vocabulary and meanings. However, the main focus is incorporating technology to help people understand the Qur'an's meanings. The frameworks can be summarised and categorised into two main sections: "Static" and "Dynamic" platforms. Static platforms are unidirectional, non-interactive, free of AI or algorithms, comprise a simple database having two columns, i.e., words and meanings that are saved on user equipment; this approach lacks several features proposed in the present study. Example: "Al

Qur'an Tadabur Wa Amal" (Qur'an: Reasoning and Application) [4] "Mashrou' Aya" (The Verse Project) [5], "Maany Kalamat Al Qur'an Al Kareem" (The Holy Qur'an Vocabulary Meanings) [6], "Al-Tafaseer Al-Azeema" (The Great Interpretations) [7] and many others.

Concurrently, interactive studies and platforms are limited. First, in the research entitled "The Contribution of Ascending Hierarchical Clustering to the Mining of Information Security Related to Cryptography", researcher Idris Al-Kharshaf mentioned Some Algorithms Related to Understanding the Meaning of Dashed Words, giving an example of the opening of Surah "Yusuf": (Alif-Lâm-Ra) using tree ascension and mining.

Moreover, researcher Abdul Latif Baba also mentioned conclusions based on mathematical logic where facts are converted into logical equations, assuming that such equations can provide other conclusions after implementing specific processes using intelligent algorithms [9]. Researchers Howaida Ali et al. conducted a study entitled "Summarising the Holy Qur'an interpretation", based on deep learning algorithms that produce the required meaning in a summarised form. This process uses several artificial intelligence techniques [10].

Noticeably, the abovementioned research has aspects resembling the present study concerning an understanding of the meaning of the Qur'an vocabulary. However, these works do not consider user behaviour or attempt to determine their level of understanding. Some of these works can be critiqued from an Islamic perspective because the meanings are predetermined, especially for "interpreted" (Taweel) text for similar verses used to explain the others or specify generic meanings to limit absolute meanings. Hence, language should not be interpreted differently than the proper form in the Qur'an, including the prophet's teachings that Muslims understood properly.

3. Practices Regarding Language Learning

Application benefits could be increased by considering human studies and experiments concerning effective and efficient word understanding and memorising. It is a valuable addition because it does not conflict with Islamic jurisprudence or affect word meanings specified by interpretation scholars. Several studies and proposed incorporation techniques are specified below; additional details are available in the tables and figures section.

Table 2: Practices concerning language learning

Authors, Study date	Practice mentioned in the study	Concept Utilisation Approach
[11]	Clear and direct presentation of word meanings for a specific context.	Using easy-to-understand statements, straightforwardness, focusing on the essence specified by the Qur'an.
[12]	Multiple revisions of words using different contexts	Repeating and revising words; A study proposed revising the word seventy times, which could be done over several days or weeks; Presenting the word in specific contexts like the Arabic meaning and Qur'an-specific meaning; Using smartphone notifications for revision.
[13]	Repeated word use to help students	Starting with "Al- Fatehah" - first Surah in the Qur'an, followed by other short "Surahs."
[14]	Elaborate student/user expectations to facilitate better study and faster understanding	The student is expected to understand the meaning of the words in the Qur'an; this activity could be emphasised in tests, highlighting using different colours and forms
[15]	Not limiting vocabulary to meaning; instead,	Example: 1- The vocabulary meaning in the Qur'an

	providing context details also	(Most important for beginners) 2- Linguistic Definition 3- Contextual example by putting the word in a sentence in Arabic. 4- Word derivatives 5- Word opposites These methods lead to a deeper understanding and offer better learning options.
[16]	The number of words learnt daily (between 2 - 8 words per day)	The student should choose the word count not exceeding eight, while being allowed to skip known words.
[17]	Word presentation varieties using different media (Text, Audio, Image)	There is no need to pronounce the word because Arabic has clear phonetics than most other languages. During this phase, the application targets Arabic speaker users. Helping aid to be offered using images, if possible, to facilitate easier understanding. These steps complement the process of explaining words using different contexts.

4. Study Benefits

This study features a new and innovative approach that can be compared using a phone analogy: traditional mobile phones and smartphones are phones, but they offer different functionality. This study proposes innovation using advanced AI, integrating the study and content, age-based content presentation, considering prior language experience, right and wrong answers, user location, and time.

Moreover, the platform can identify a competitor having similar skills from the connected users. Alternatively, the system itself could compete with the user based on user skill.

A growing user base might propel this platform into the big data domain, comprising three primary axes: speed, data diversity, size-based differentiation. This study is also unique because it is based on the "Educational Module" concept: concise study units comprising theoretical and practical content, which can be delivered to learners using technological and computational resources. The "Educational Module" is known for specific objectives, several activities, and self-paced learning. The module is integrated and can adapt to different capacities. Moreover, it can compare student achievements using specific evaluation criteria.

The study is also based on reviewed scientific research on language learning. Such studies are the results of different experiments concerning the precise way to learn the vocabulary of any language. Another platform feature is SMART goals that are clear and measurable. Such indicators could be applied to determine user level.

Considering the administrative level, the system could also indicate user progress, success, comparison with others, and word comprehension. From an administrative standpoint, the number of users, active users, engagement levels, and progress could be determined.

Additionally, this platform facilitates a fair, competitive spirit that encourages users to learn. Such competition aims to encourage revision, develop a relationship between the user and the platform, and create joy. Finally, simplicity and usability: all mentioned processes execute on the backend. Users would be insulated from such processes and would focus only on learning to fulfil learning objectives.

5. Proposed Solution

The system works using smartphone applications and websites. The App Manager is a SaaS aspect that executes using a PaaS implementation. Regardless of cloud providers like Google or Amazon, the Cloud Computing approach

was used to facilitate cost savings by eliminating physical hardware; moreover, cloud-based systems are scalable, and their performance can be measured. The App Manager utilises the Mobile Agent System, which was selected due to its platform-independent execution, regardless of type of operating system. It can simultaneously be offered on other mobile devices.

Additionally, it has independent decision-making, is free of user intervention and can be started/stopped with the pre-set configuration. Additionally, the cost is lower than other technologies. The application works well with other digital applications, especially from multiple devices and user contexts [19]. Figure (1) depicts the Platform Structure.

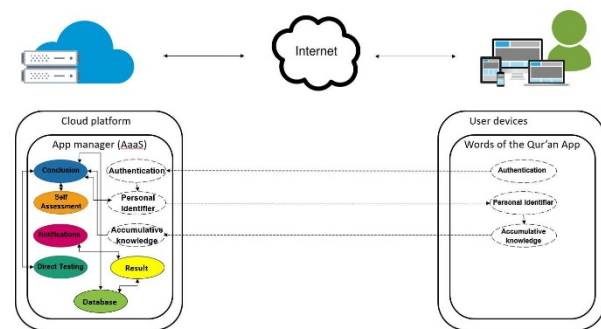


Fig. 1 Platform Structure

The App manager includes an integrated set of Mobile Agent Systems, working together to fulfil different roles as specified:

- Authentication: The agent performs user authentication. This mobile agent starts with the app and holds user input data required for authentication. If user authentication fails, a message is displayed stating that the inputs are incorrect. Successful authentication calls the next agent.
- Personal identifier: A mobile agent that receives user data from the authentication agent and then searches for the user's data: achieved level, preference, status, and other fields displayed on the user application. This data can be updated using the Conclusion Agent.
- Accumulative knowledge: This mobile agent works on the user device. It collects and monitors user data and cognitive and behavioural aspects when an individual uses the program, e.g., right

and wrong answers, errors, and other aspects. The data is transferred to the conclusion agent.

- Conclusion: This agent is the app core that contains all AI algorithms, processes that determine and present user knowledge levels. After performing several deduction and conclusion processes, knowledge decisions are made using several inputs like cumulative knowledge, self-assessment, and direct testing. This agent is directly responsible for implementing and automating the mentioned practices regarding language learning. This agent updates the databases and personal identifiers.
- Self-Assessment and Direct Testing: Different independent agents test the system. The first agent performs user assessment based on data collecting using the Conclusion Agent, testing the user for daily words and previous wrong answers. The second agent tests and assesses direct contacts with the same platform using shared user knowledge.
- Results: The Agent reviews results, presents them to the user and sends them to the notification agent. Results could also be used to compare users, evaluate, measure progress, understand platform success, specifically for decision-makers and platform owners.
- Notifications: An agent shows notifications to the user during program execution and other times to encourage users to access the application. It reminds users of their achievements and what could be achieved from daily and weekly goals.

From the user experience perspective, the application has three primary tabs: word study, revision, and competition; moreover, there are application details and operating instructions.

The revise and study section divides the vocabulary into several lists based on the "Hezb" (Sub-Part) of the Qur'an. Hence, there are sixty lists in study modules. The first "Hezb" (sub-part) appears from the short "Surahs"; other "Hezbs" remain locked until the first "Hezb" is passed, like other applications using phased competition. Users can download the app, and if they do not complete the "Hezbs", they can follow the stepwise process.

When a specific "Hezb" is selected, all words in that "Hezb" are presented to the user. The user then selects a word and enters its explanation. It is also possible to flip words using cards. An easy word list might be created to skip such words,

which would not be included in tests. Similarly, a list of favourite or challenging words can be created for customised tests when the user enters after selecting "make a test." Periodically, users get the meaning of each words they study using audio, video, and text.

Vocabulary explanation or cards consist of the following:

- The vocabulary meaning of the Qur'an (Critical for beginners)
- Linguistic definitions
- Comprehensive images to aid vocabulary, using drawings, if needed
- Contextual example by using the word in a sentence in Arabic
- Word derivatives
- Word opposites

After signing up, program settings can be set to know the number of words the user wants to review, given that it does not exceed eight words. The user can also work using any platform or website based on the username and password to find all recorded and saved data.

When a user finishes daily word tasks or reviews all words, the application creates a test using different types of questions: filling the blanks, objective questions, and so on. A test can be created for a specific word every three days, followed by two days, five days, two weeks, and one month till users master the word.

Every list has a status to show memory and success level, remaining vocabulary, and revision schedule. For example, when scoring 80% or more, the following "Hezb" (Sub-part) is open for the user while providing continuous revision for the first "Hezb".

Competition areas are live matches with others willing to compete concurrently. The app facilitates compatibility between competitors, referring to the completed "Hezbs". For example, a user who is still in "Hezb" number 3 cannot compete with another user at a higher level unless the competition is limited to the 3rd "Hezb". Previous tests could be utilised, and whoever answers faster gets more points and medals. A list of honours can be made using

users' nicknames, achieved medals, and respective countries. Each race consists of 7 questions; the user with the faster and correct response wins, and points could be used in that system. It is possible to search for a friend and race against them based on availability. If human competitors are not available, then the user can race against the computer.

6. Expected Results

Simply put, this concept aims to help people better understand the Holy Qur'an and reason its meanings, hoping that such a study helps youngsters understand God's Holy Book, providing more engagement that makes people more interested, especially using technology and remote learning.

This study targets hard-to-reach youngsters with a passion for technology but less interest in reading. The cost of printing books for a specified group of the society will surpass the extent of the reach of this platform. To conclude, this concept might potentially minimise costs and increase productivity, a goal that all institutions serving the holy book of God seek to achieve.

The "Educational Module" in the application helps save time if the user is already familiar with a few terminologies. The module measures previous knowledge and adapts the curriculum based on the remaining content without revising the entire curriculum. This user-level difference follows the normal distribution.

7. Conclusion

This idea is about an innovative smartphone platform, aiming to help users reason and understand the Holy Qur'an and live through its meanings explained by scholars who are specialised in interpreting the Qur'an. This is all made interesting, interactive, and straightforward using modern technology based on recent language research. The Qur'an offers guidance to humankind, a scripture that aims to guide and enlighten humanity. The future work will focus on the implementation and evaluation of the proposed solution including the feedback that assists the technical architecture.

References

- [1] The vocabulary of the Qur'an, Abdul Hamid al-Farahi, Islah, Sarai Mir, The Greatest Hate - India 1358 AH.
- [2] The vocabulary of the Qur'an, Al-Ragheb Al-Isfahani, Manuscript's verification: Safwan Dawoodi, "Dar Al Qalam", Damascus 1418 AH.
- [3] "Al-Mokhtasar Fi Al-Tafseer" (A brief in Interpretation), Various Scholars, Tafseer Centre for Qur'anic Studies, Riyadh, 1436 Ah.
- [4] "Al Qur'an Tadabur Wa Amal" (Qur'an: Reasoning and Application), Al-Menhaj Centre for educational supervision and training, Riyadh, 1436 AH.
- [5] "Aya" (Verse) Application, "Al-Mokhtasar Fi Tafseer Al Qur'an Al-Kareem" (A brief in Interpretation of the Holy Qur'an), Various Scholars, Tafseer Centre for Qur'anic Studies, Riyadh, 1435 AH.
- [6] Holy Qur'an meanings website, [Linkhttp://www.english2arabic.com/omar/sattarsite/qword.asp](http://www.english2arabic.com/omar/sattarsite/qword.asp)
- [7] Al-Tafaseer Al-Azeema" (The Great Interpretations), Prince Ghazi endowment for Qur'anic Thought, http://www.greattafsirs.com/Tafsir_Books.aspx
- [8] The Contribution of Ascending Hierarchical Clustering to the Mining of Information Security Related to Cryptography, Idris Al-Kharshaf, International Conference on Islamic Applications in Computer Science and Technologies) IMAN 2015.
- [9] Deductive reasoning in the Holy Qur'an, Abdul Latif Baba, International Conference on Islamic Applications in Computer Science and Technologies) IMAN 2015.
- [10] Summarising the Holy Qur'an interpretation using deep learning algorithms, Howaida Ali, Nazek Ibrahim, Nessren Saleh, International Conference on Islamic Applications in Computer Science and Technologies) IMAN 2016.
- [11] The Noble Qur'an, For Verses meanings translation in English, Website: <https://Qur'an.com/>



Khalid Ali Almarhabi is an assistant professor at the Computer Science Department, College of Computing in Al-Qunfudah, Umm Al-Qura University, Saudi Arabia. He got his Ph.D. in Computer Science after studying this degree at both King Abdulaziz University, Jeddah, Saudi Arabia, and Queensland University of Technology, Brisbane, Australia. He also holds an MSc degree in Information Technology from Queensland University of Technology, Brisbane, Australia, in 2014.

He holds a BSc degree in computer science from King Abdulaziz University, Jeddah, Saudi Arabia, in 2009. His research interests are information security, BYODs research, access control policies, information system management, e-learning, and cloud computing.