

Usability Evaluation of Iraqi News Applications

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Abstract

The research examines and evaluates the usability of Iraqi news applications, (Alrabiaa) and (Alsumaria), using regular observation and the heuristics evaluation method based on a set of criteria that were derived from the basic rules of ease of use. The research is descriptive research, the survey methodology steps were followed to achieve the objectives. The researchers reached a number of conclusions, including that the applications considered the general rules and principles of usability, despite the existence of errors in terms of format and content, which can be addressed to obtain a better user experience, such as font colors, text alignment, options to change the type of view and user interface, and the appearance of ads in published news. The researchers also noted a significant correlation between the applications and their parent media institutions, in addition to the superiority of (Alsumaria) application over (Alrabiaa) application, in terms of its media services that were characterized by speed, efficiency and ease of access.

Keywords: Usability, News Apps, Digital Media, Digital Journalism, News.

Introduction

Technological developments have led to the emergence of means that have caused significant changes in the form of the communication process and the way we follow news and current events. The most prominent of these means are news applications, which are witnessing clear growth and an increase in the number of their users for several reasons, the most important of which are the speed of delivering news and ease of use.

These news applications seek to attract users by providing various options to achieve an error-free user experience that shows communication and media functions, from here, this research aims to test the usability of a sample of Iraqi news applications, (Alrabiaa) and (Alsumaria), within the period from October 1, 2023, to December 31, 2023, through observation and heuristics evaluation method.

The research is divided into three parts. The first is the methodological procedures, it includes the research problem, its importance, its objectives, its community, its sample, and the tools used in collecting data, it also includes several previous studies that have contributed to enriching aspects of the research, while the second part reviews the concept of usability and its general rules, and the third part represents an interpretation of the results of testing and evaluating the usability of Iraqi news applications.

Research Methodology

I. The Research Problem

The researchers identified the research problem in a set of questions:

1. Do Iraqi news applications commit to usability standards?
2. What is the quality of the content published on the news applications in question?
3. What services do the Iraqi news applications in question provide to the users?

II. The Research Importance

The importance of this research is reflected in the following points:

1. The media library requires further studies and research on news applications; because they are media platforms with a large audience, which make this research is an addition to the scientific heritage.
2. Take advantage of the results and indicators obtained to diagnose the strengths and weaknesses of Iraqi news applications to improve, develop, and upgrade their media services.

III. The Research Objectives

The research seeks to:

1. Designing a scale to evaluate and test the usability of the Iraqi news applications in question.
2. Knowing the quality of the content published on the applications and how it relates to their parent media.
3. Identify and classify the media services provided by the Iraqi news applications in question to the users.

IV. The Research Community and its Sample

The researchers conducted a preliminary survey to identify the research community and its characteristics, which are the news applications of Iraqi media, within the period from March 1, 2023, to March 31, 2023. The results of the study indicated that there are (8) applications available on mobile application download platforms, bearing the name of their media institutions. These applications are shown in Table (1):

Table (1) Iraqi News Applications

No.	Application Name	Media Institution	Platforms
1	AlRasheedTV	Al Rasheed Satellite Channel	App Store, Play Store
2	Alforat News	Al Forat Network	App Store
3	Alrabiaa	Alrabiaa Network Television	App Store, Play Store
4	Alsharqiya TV	Al Sharqiya Group	App Store, Play Store
5	Alsumaria	Alsumaria TV	AppGallery, App Store, Play Store
6	INA (Iraqi News Agency)	Iraqi Media Network	AppGallery, App Store, Play Store
7	INEWS	INEWS Satellite Channel	App Store, Play Store
8	Rudaw	Rudaw Media Network	App Store, Play Store

The researchers chose two of the news applications described above, using a random sampling method that provides equal opportunities for all community elements to appear (Al-Danani & Hashim, 2016, p. 106), these applications are (Alrabiaa) and (Alsumaria), represent the research community, to evaluate their usability, test their efficiency, and identify the quality of their content and the services provided to users, within the period from October 1, 2023, to December 31, 2023.

The researchers were diligent in monitoring the news applications throughout the specified period and collecting their published news for identification and classification. The total number of published news was (9366), distributed by (4905) on (Alrabiaa) application and (4416) on (Alsumaria) application, as shown in table (2):

Table (2) Classification of Published News in (Alrabiaa) and (Alsumaria) Applications

No.	Topics and events	Alrabiaa		Alsumaria	
		F	%	F	%
1	Political	1755	35.85	1064	24.10
2	Security	1060	21.65	1102	24.95
3	Economical	844	17.24	725	16.42
4	Social	807	16.49	761	17.23
5	Sport	254	5.19	412	9.33
6	Art and Culture	61	1.25	254	5.75
7	Disasters and Accidents	114	2.33	98	2.22
Total		4895	100	4416	100

V. The Research Methodology and Tools

The researchers relied on the steps and procedures of the survey method to reach the results and achieve the research objectives. It is a descriptive research method, through which data and information related to the phenomenon under research are collected to identify it and determine its aspects (Obaidat, Abd Al-Haqq, & Adas, 2015, p. 190), through objective and accurate description and interpretation.

The data collection tools used by the researchers in this research are:

1. **Regular observation:** it means an accurate observation of the phenomenon in question to know its characteristics and the factors affecting it (Hussain, 2006, p. 182), and the researchers used this tool to observe the applications directly, divided into three phases: (the first phase from October 1, 2023, to October 10, 2023), (the second phase from November 11, 2023 to November 20, 2023), (the third phase from December 21, 2023 to December 31, 2023). The researchers were keen to download the sample news applications and install them in three modern mobile devices with different operating systems, (Android, IOS, and HarmonyOS), to verify that there are no fundamental changes in the general format and technical characteristics, as well as to identify the nature of published news and the services provided to users, and to find that there are no fundamental differences that affect the overall design or content published.
2. **Evaluation form:** the evaluation form was based on the five main axes of evaluating usability, which are: (architecture, content, access, interaction, and design) (Hasan & Abo Al-Rab, 2012, p. 5), and it included (21) sub-criteria that the researchers derived from the general principles of heuristics evaluation method. The researchers tested the validity of the evaluation form using the face validity method, by presenting it to a group of arbitrators, to verify the validity of the axes and criteria. The percentage of their agreement on it reached (87.44%), and the reliability was verified by applying the consistency over time, that is after a month had passed. Its percentage reached (95.95%).

VI. Previous Studies

1. **(Al-Manzalawi, 2022):** the study belongs to the descriptive exploratory studies and relies on the steps of the descriptive-analytical and comparative approach. It is concerned with monitoring and evaluating the quality of the design of a sample of newspaper websites. The study seeks to reveal the availability of constructive elements in the design, as well as to know the extent to which the standards for the quality of images, videos, infographics, and podcasts are met. The study has reached several results, most notably the interest of (Youm7) website in keeping pace with the transition towards digital, the communicator of the website was interested in interactive constructive elements and communicative constructive elements, despite deficiencies in the use of e-mail, chat rooms, and newsletters. the study also revealed the poor interest of Egyptian and foreign websites, in the research sample, in the quality of images in terms of accuracy, size, and dimensions.
2. **(Arafat, 2021):** this study evaluated the quality of newspaper websites in the Arabian Gulf in terms of design and production. The researcher sought to know the ease of accessing, using, and browsing online newspapers, as well as identifying the readability of titles and text. The study belongs to descriptive studies and relied on the steps of the survey and comparative method. Several results were reached, including that the two newspapers in the research sample did not take advantage of the characteristics and advantages offered by the Internet that contribute to its development and making it more usable, and those responsible for communicating in newspapers must work to exploit these new technologies to obtain comprehensive quality on their websites.
3. **(Kchour & Bachir, 2014):** the study seeks to evaluate the (BBC Arabic) and (CNN Arabic) websites based on usability standards, as well as to identify the methods followed by the websites in presenting published news and reports, and to examine their available media services. The study relied on an evaluation form, it included two sections, the first contains a set of standards and principles based on usability axes, criteria, and rules, and the other section includes a set of elements concerned with evaluating the method of presenting content published on the pages of the websites. This study is considered a descriptive study, and the researchers reached a set of results, the most important of which is that the websites adhere to usability standards for design, colors, and patterns, as well as titles, font shapes, and sizes, the results also showed that there is difficulty in the process of searching for information in search engines, in addition to neglecting linking websites with their media institutions, and the websites were

influenced by the nature of the medium, which is the Internet, and this was reflected on the published news.

Reviewing the previous studies mentioned contributed to determining the dimensions of the problem of this research more accurately, and knowing the appropriate methodological procedures and tools to test usability, as well as helping to access important sources and references that enriched the theoretical aspects of the research, and also helped to start from where others ended while avoiding repeating what was studied and tested.

Usability: Attributes, Elements, and Principles

I. Definition of Usability

Usability is defined as “extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use” (ISO, n.d.). In other words, usability revolves around making devices, websites, and applications usable, as well as making them understandable and recognizable by users. Usability is an important branch that has rules, and standards, taken into consideration in the construction and design process (Ghazarian, 2014), whether for websites or applications.

II. Attributes of Usability

Nielsen, a pioneer in the field of usability, believes that there are five basic attributes involved in usability (Nielsen, 1993, pp. 27-33):

1. **Learnability:** the user can browse for the first time and easily understand the sections and the content they contain, and the extent of his ability to also know the services that are provided.
2. **Efficiency:** the user's speed in accessing published information, obtaining it, or accomplishing other tasks.
3. **Memorability:** the user's ability to remember the general appearance of the website or the application and how to use it the second time without having to remember how to use it again.
4. **Errors:** the number of errors that may occur during use and browsing, what is the level of these errors, and how they can be treated and overcome.
5. **Satisfaction:** to what extent is the user satisfied with the website or the application that he uses and benefits from its services.

III. Elements and Principles of Usability

Studies that seek to test usability using a heuristics evaluation method are based on a set of general principles or rules called the guide, which are (Nielsen, 1993, pp. 115-155):

1. **Visibility of system status:** keeping the user knowledgeable and informed of everything that is happening on the website or the application, whether in terms of updating published content or making technical changes.
2. **Match between system and real world:** using elements and concepts that are clear and simple to the user, as well as using everything familiar to the user so that the information appears in an organized and logical manner.
3. **User control and freedom:** giving the user some freedom and control, such as changing the background color or font size, as well as providing options to return and cancel commands.
4. **Consistency and standards:** users can rely on symbols, colors, and commands that they have used before, so unifying them will improve their experience.
5. **Error prevention:** it is necessary to prevent errors during use, especially on the main page, even if these errors are simple.
6. **Recognition rather than recall:** the functions, commands, and instructions are presented in a way that does not burden the user with too much information at once.
7. **Flexibility and efficiency of use:** the website or application should be compatible with all users, whether they are beginners or experienced.
8. **Aesthetic and minimalist design:** the design should be characterized by simplicity, clarity, arrangement, and coordination.
9. **Help users recognize errors:** by providing instructions and summaries to explain how things work.
10. **Help and documentation:** make it easy for users to access and retrieve information and archives.

Presenting and Interpreting the Results of Usability Test on Iraqi News Applications and Evaluating Them

I. The Design of News Applications and Their Interface

Table (3) shows the results related to the design or the general appearance of the Iraqi news applications in question and the consistency of elements and colors in their interface, which were as follows:

Table (3) Evaluation of the Design and User Interface of Iraqi News Applications

No.	Criteria	Alrabiaa	Alsumaria
1	Consistency of the application interface	The application interface is consistent, tidy, and error-free. Ads appear in a limited space at the bottom of the interface, which does not affect the overall appearance.	The application interface is consistent, tidy, and error-free. Ads in the application interface affect the overall appearance.
2	Coordination of the colors and patterns	The application uses black, white, and green colors for text. The application uses yellow, green, and blue colors for dividers and frames. The application uses gray color for lines and icons.	The application uses black color for text. The application uses red color for lines, dividers, and icons.
3	Backgrounds	The application uses bright white backgrounds. The feature to change the background color to black (Dark mode) is not available.	The application uses bright white backgrounds. The feature to change the background color to black (Dark mode) is not available.
4	Design of the pages and subsections	Pages and subsections are consistent and all items appear organized. Ads appear on subpages.	Pages and subsections are consistent and all items appear organized. Ads appear on subpages.
5	Options to change the user interface	Available, can be changed from (List) to (Grid).	Unavailable.

Based on what is stated in the table above, the following is evident:

1. The two applications had a consistent and stable interface, with no errors affecting user access.
2. Advertisements appear in both applications, but they appear clearly in (Alsumaria) application and occupy large areas within the news.
3. (Alsumaria) application consistently uses black text color, whereas (Alrabiaa) application uses three different colors, which could confuse users and serve as a negative indicator.
4. The applications use white backgrounds, which are suitable for reading, without providing the feature of changing their color or activating (Dark mode) that allows the user to read text on a black background.
5. The subpages for both applications were well-arranged, organized, and coordinated, and had a consistent design, which is a positive indicator.
6. (Alrabiaa) application provides the feature of changing the user interface, which allows the user flexibility in choosing the type that suits his desires and the nature of his use, while this feature is not available in (Alsumaria) application.

II. Ease of Use and Browsing in Applications

Table (4) shows the results related to testing and evaluating the ease of use of Iraqi news applications, their browsability, the efficiency of their navigational tools, and the clarity of their auxiliary commands, which are:

Table (4) Evaluating the Ease of Use and Browsing in Iraqi News Applications

No.	Criteria	Alrabiaa	Alsumaria
1	Availability and accessibility of browsing tools	Browsing and navigation tools are clear and easy to use.	Browsing and navigation tools are clear and easy to use.

			There is a problem that sometimes causes the list of commands and side sections to not appear.
2	Efficiency of search engine	Performs efficiently and at a high speed. The results appear in record time, arranged from newest to oldest.	Works fine, but it's slow. The results are shown in order from newest to oldest.
3	The use of links, tags (labels), hashtags, and hypertexts	Links are used to redirect users to webpages outside the application.	Hypertexts are used, but they are confused and unnoticeable from non-clickable text.

The researchers explain the results in the following points:

1. Both applications had browsing tools that were easily accessible and user-friendly for carrying out required functions. However, the researchers noticed a continuous issue with (Alsumaria) application. The list of commands disappears, making it difficult to use.
2. The researchers tested the search engines by entering keywords and phrases, and the results showed the efficiency of the search engines, but there was a difference in the speed of displaying the results in both applications.
3. (Alrabiaa) application used links that referred the user to external pages, and the links appeared in their full form without shortcuts, while (Alsumaria) application used hypertexts, but they appeared unclear and unnoticeable from the text.

III. Quality of News Content

Table (5) shows the results related to evaluating the quality of news content published in the Iraqi news applications in question, and they are represented in a set of criteria:

Table (5) Evaluation of the Quality of News Content Published in Iraqi News Applications

No.	Criteria	Alrabiaa	Alsumaria
1	Types of fonts used and their sizes	The type of font used is (Tajawal). Readable with clear letters. The ability to change the font size to (7) different sizes to suit the user's preference.	The type of font used is (Droid Arabic Kufi). Readable with clear letters. The ability to change the font size to (4) sizes (normal, medium, large, and extra-large).
2	Shapes and color of news headlines	The application uses small headlines in black. The application uses a bold font for all published news headlines.	The application uses clear headlines in black. There is inconsistency in the use of bold typeface between different headlines.
3	Text formats of news articles (body)	Texts are clear in black color. The text appears to be misaligned with the spaces allocated to them on the left.	Texts are clear in black color. The text appears to be misaligned with the spaces allocated to them on the left.
4	The structures of journalistic writing	The inverted pyramid is the most used structure.	The inverted pyramid is the most used structure.
5	Grammatical and spelling errors	Grammatical errors were observed. No spelling errors were observed.	No grammatical or spelling errors were observed within the search period
6	Use of multimedia	Images with medium quality. Videos that were added from YouTube.	Images with medium quality. Short videos with the ability to play them in the highest possible quality.
7	Classification of published news	Classified by the type of topics and events.	Classified by the type of topics and events.

Therefore, the results can be interpreted as follows:

1. The applications in question were keen to use clear, readable fonts in their published news, with options to change their size for the user.

2. The results showed that the headlines of published news, reports, and articles in (Alrabiaa) application are small, and their size cannot be changed, while they were of good size and clear in (Alsumaria) application, although there is a difference in the use of bold typeface between one headline and another.
3. News text was clear in the applications but appeared misaligned on the left.
4. The inverted pyramid structure is the most used structure for writing and editing published news on the applications.
5. The researchers observed grammatical errors in the news published on (Alrabiaa) application, while no grammatical or spelling errors appeared in (Alsumaria) application, within the period specified for the research.
6. Both applications used medium-quality images, as well as video clips.
7. News, reports, and articles published in the applications are classified according to the type of topics and events, such as political, economic, security, sport, etc.

IV. Access and Connectivity

Table (6) presents the results related to evaluating access to Iraqi news applications and the ability to communicate with journalists, which are:

Table (6) Evaluating Access to Iraqi News Applications and the Possibility of Communicating

No.	Criteria	Alrabiaa	Alsumaria
1	The ability to access and download the application	It is possible to access the application and download it from (App Store) and (Play Store).	It is possible to access the application and download it from (AppGallery), (App Store), and (Play Store).
2	Possibility of requesting help	Unavailable.	Unavailable.
3	Possibility of communicating with journalists	The user can communicate with the main medium, which is (Alrabiaa Network Television), via email, phone number, or writing a message within the application and sending it.	The user can communicate with the main medium, which is (Alsumaria TV), via e-mail or phone numbers of Baghdad office and Beirut office.

Based on what is stated in the table, it appears:

1. The ability to access and download (Alsumaria) application from all download platforms, while (Alrabiaa) application can be accessed and downloaded through the (App Store) and (Google Play) platforms.
2. Requesting help is not available in both applications, and there is no guidance on using the applications and the services they provide.
3. In both applications, the users can communicate indirectly with journalists through more than one means.

V. Interaction and Consideration of Users

Table (7) below shows the results related to evaluating interaction and levels of interactivity in the Iraqi news applications in question, which are:

Table (7) Evaluating Interaction and Consideration of the Level of Users in Iraqi News Applications

No.	Criteria	Alrabiaa	Alsumaria
1	Languages supported by the application	Arabic only.	Arabic only.
2	Availability of interaction tools	Share tool only.	Share tool only.
3	Considering people with special needs and disability	Unavailable.	Unavailable.

The following results were obtained:

1. The research sample applications support the Arabic language only as a primary language for everything written and published.
2. A content sharing tool is available in both applications, by sending news as an external link.
3. Lack of options to assist people with special needs in accessing published news.

VI. Services Provided by Iraqi News Applications

Table (8) below shows the media services provided by the Iraqi news applications in question, and the results were as follows:

1. **(Alrabiaa) application:** the results showed that the application provides only (3) services, which are:
 - a. **Notifications and alerts:** a service that allows the users to obtain news, reports, and articles published on the application. It is characterized by the ability to choose its type, such as political, sports, social, etc., with the ability to enable or disable it.
 - b. **Internet radio:** this service allows the users to listen to everything broadcast on (Alrabiaa FM) live.
 - c. **Live broadcast:** provides access to the live broadcast of (Alrabiaa TV) and watch everything shown on it.
2. **(Alsumaria) application:** the results below show that the application provides (7) services to its users:
 - a. **Notifications and alerts:** through which news is delivered to the users and can be turned on or off, with the ability to choose the type of news that the user prefers.
 - b. **Weather:** it gives the users news and details about the weather forecast, but when clicked, it refers the user to a webpage outside the application.
 - c. **Internet radio:** it allows the users to access (Alsumaria FM)'s live radio broadcasts with ease.
 - d. **Horoscope news:** provides the users with horoscope and astrology predictions. The users can choose the lucky sign to get all the predictions related to it.
 - e. **Live broadcast:** a service that allows the users to watch the live broadcast of (Alsumaria TV) satellite channel.
 - f. **Ministerial exam results:** a service that provides users with access to the Iraqi ministerial exam results for completed grades.
 - g. **Programs and series:** a service that allows users to select and watch missed programs and series, similar to a digital library.

Table (8) Services Provided by (Alrabiaa) and (Alsumaria) Applications

No.	Alrabiaa	Alsumaria
1	Notifications and alerts	Notifications and alerts
2	-	Weather
3	Internet radio (Alrabiaa FM)	Internet radio (Alsumaria FM)
4	-	Horoscope news
5	Live broadcast (Alrabiaa FM)	Live broadcast (Alsumaria TV)
6	-	Ministerial exam results
7	-	Programs and series
Total	3	7

Conclusions

1. Iraqi news applications, represented by (Alrabiaa) and (Alsumaria), took into account the general principles and rules of usability, despite the presence of errors that can be addressed to achieve a better user experience.
2. The researchers believe that the interface of the news applications, as well as its elements, news, and sub-pages, is well-organized and clear
3. (Alrabiaa) did not succeed in achieving consistency, as the application used more than one color, which may cause confusion for the user.
4. The applications in question limited the user to reading on a bright white background without providing the option to change it to black or a dark color, which helps to read well at night.
5. (Alrabiaa) application outperformed (Alsumaria) application in providing options for changing the user interface.
6. Both applications had efficient navigation tools, which made accessing and reading news. The search engines were also efficient despite noticeable differences in the speed of performance and display of results. (Alrabiaa) application is credited for its faster performance and quicker display of results.
7. (Alrabiaa) application used links instead of interactive text in an incorrect manner, making them appear unorganized and lengthy. On the other hand, (Alsumaria) application failed to utilize interactive words effectively, as they were unclear and lacked any indication that they were clickable links leading to another page.

8. The journalistic content published in both applications was distinguished by its quality, as the published news was professionally edited, in which the communicator relied on the inverted pyramid structure, which is a structure suitable for the nature of the Internet, giving the reader the very important information, then the least important.
9. There is a significant connection between the news applications in question and their media institutions
10. Font sizes are appropriate and readable in both applications, as well as options to change them.
11. The applications were keen to classify the published news into various sections according to the type of topic, which is a positive indicator that makes it easier for the user to access the topics he is interested in.
12. (Alsumaria) application excelled in terms of the absence of grammars or spelling errors in its published news within the specified period of research.
13. The images in both applications are of average quality and small, while the videos are high quality.
14. The applications considered accessibility but overlooked the ability to seek technical support and lacked clear instructions.
15. Users have the ability to communicate with the main medium of the applications, sending inquiries and suggestions.
16. The applications support the Arabic language only, and do not provide real-time interactive tools such as comments and likes, in addition to not providing any assistance tools for users with special needs and disability.
17. (Alsumaria) application excelled in providing a range of services, while (Alrabiaa) application was limited to providing notification services, Internet radio, and live broadcasting.
18. The researchers observed that all the services provided by (Alsumaria) application work efficiently and quickly, unlike the services of (Alrabiaa) application, which did not work well and suffered from many technical problems, most notably the disappearance of the image and the appearance of a black screen in the live broadcast service.

Recommendations

1. Taking into consideration the principles and standards of usability and adhering to them more, and making sure to conduct periodic tests on news applications to diagnose and address potential errors.
2. Providing the users with flexibility to customize the user interface, including options to modify the background color and adjust text size.
3. Work continuously to develop and update news applications and make them more efficient and high-quality.
4. Pay attention to the published news and verify that they do not contain any grammar, spelling, or editorial errors.
5. Media institutions need to ensure that news applications function as standalone platforms, providing a distinct level of privacy for the news, reports, and other journalistic content they publish. It is crucial to consider the specific characteristics of the mobile device on which these applications are accessed.
6. Testing the usability of news applications from the user's point of view, and working on conducting studies on the communicator or journalists assigned to publish news in the applications to know their characteristics, skills, and the problems and challenges they face.

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