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Digital repositories in the Arab universities:
A comparative analytical study

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Abstract

This study aims to analyse and compare the knowledgeable repositories in some Arab universities, the importance of this study stemmed from showing us the advantages and the disadvantages of the digital repositories in the Arab universities and it sheds light on its excellent sides for supporting it and on the defects of its treatment then avoided it in the future. This study used the analytical descriptive approach and the comparative descriptive approach on the sample of the digital repositories in six Arab universities, which are: Alexandria University, Damascus University, Khartoum University, King Saud University, Petrol and Minerals University and Nayef University of the security sciences.

The study conveyed the repositories' distinction in Alexandria University more than the last repositories which are the sample in the amount of the massive content and the social sharing in books and the existence of the notification tools which allow the possibility of highlighting and underlining some text areas and adding the poster notes and searching in all the text is based on the search server\textsuperscript{*} as it should support five languages: which are Arabic language, English language, French language, Spanish language and Italian language and digitizing the available subjects in the library or the collected subjects from other institutions by a laboratory which is equipped with the latest digital technology which digitalize various subjects including the slides in different shapes, the negative photos, the books, the manuscripts, the photos, the maps and the audio - visual materials and the digital repository is distinguished in Damascus University with using Dublin Core criteria in describing its content and supporting OAI - PMH protocol and repository including instructive guidelines like the depositor guide and the user guide, also the digital repository in Khartoum is characterized by user interface characterized by the good order with the existence of new adds which enter the digital repository according to the existed search type whether it was a subject, an address or the author's name. The two repositories of Nawaf University for the security sciences and King Fahd University for petrol and minerals are characterized from the last repositories in the universities which are the study sample by the advanced search which is more accurate and specific by the way which includes the whole text, the address, the creators or the authors and the summary, the date, the undisciplined and unrestricted search words and choosing the words from the drop down list which include all the available subjects in the repository, the digital repositories in Khartoum universities, King Saud universities, Nayef University for the security science, King Fahd for petrol and minerals are blamed on the absence of determining its repositories policies. And also the digital repositories in Khartoum University, King Saud University and King Fahd University for petrol and minerals are blamed on the absence
of the social communication by the social communication networks and also noticing using the universities of Damascus, Khartoum, King Saud, Nayef for security services universities of DSpace system in building its repositories. The universities of Khartoum, King Saud, Nayef for security sciences are blamed on the absence of the advanced search for the effective retrieval in its locations and also the digital repository in Khartoum University is blamed on the content's lack of the digital assets.

The study recommended conducting studies about the systems and the approaches of building the repositories in the Arab universities, the searching methods in it and also conducting comparative studies with the digital repositories in the Arab universities and also building standard models to build the digital repositories in Arab universities.

**Key Words:** The digital repositories - the free access of information - Alexandria University - Damascus University - Khartoum University - King Saud University - Nayef University for security sciences - King Fahd University for petrol and minerals - Dspace system..

### 1 - Introduction:

A group of Arab universities follows the example of the international universities in establishing the digital repositories, these repositories are concerned in spreading the intellectual production of these universities for facilitating the free access of all what is introduced of intellectual production and scientific creativity, this introduction from universities is different in its shape, its structure and its method according to the method of each University in dealing with this matter.

The problem of this study is stemmed from the differences between Arab repositories in its style and its introduced departments, and also its advantages and disadvantages besides to the offering method for the free access to the beneficiaries thus clarifying the general features in which the digital repositories are shared in, and showing the features which characterize a repository from another. To answer the search questions which are: what are the components of the digital repositories structure in Arab universities? What are the search methods in the digital repositories in Arab universities? What are the advantages of the digital repositories in Arab universities? What are the disadvantages of the digital repositories in Arab universities? What are the common features between the digital repositories in Arab universities?

This study used the analytical descriptive study for analysing these repositories and also used the comparative approach in order to compare these repositories, thus the answer of the research questions by analysing six digital repositories in Arab universities that includes: Alexandria University, Damascus University, Khartoum University, King Saud University, Petrol and minerals University and Nayef University of the security sciences.

The search limits spatially are in the six universities mentioned previously, timely are in the second part of 2014 AD, and subjectively in the departments which these digital repositories are covered by these digital repositories, its advantages. Disadvantages and its search methods.

The previous studies are browsed, the search problem are determined and formulated, the search approaches are determined, the repositories in the search sample of Arab University are determined, the digital repositories advantages and disadvantages of the digital repositories in the universities of the study sample are determined and the most important results, recommendations and future works are browsed.

### 2 - Literature Review

The researcher will browse some of the Literature Reviews which is related to this study as the following:

Study (1) entitled "the open digital repositories as one of the collecting resources in the search libraries: analytical study which aims to evaluating the digital repositories open on web and revealing how extent of benefiting the Egyptian researchers from the open digital repositories, and revealing how to benefit the Egyptian searching libraries from the open digital repositories. The study followed the screening descriptive approach, its results are conveyed that its efforts towards the free access of the information in the Arab world are characterized by its solitary and very slow and it isn't supported by
specific institutions, the awards are given in the first rank in terms of support noting that the fixed source of support is the library budget and also the internet and the colleges are two initial sources in surrounding the study sample with the concept of the free access and knowing the open digital repositories. The internet is considered also the first source in surrounding the library specialist with the free access of information and the digital repositories as one of its mechanisms. This research of this study is benefited from the proposed evaluation aspects besides to how to benefit from the digital repositories and its ways.

Study no 2, entitled “the digital repositories for the academic institutions and its role in the educational and search process and setting the mechanism of establishing the digital repository for the Arab universities.” Which aims to check and analysis fifty repository according the order of the Cyber metrics lab and distribute its contents Numerically, qualitatively, temporally and objectively”. It also aims to determine the methods followed for search and retrieval and its used programs and policies. It aims to set a mechanism for establishing the digital repositories by which the Arab universities are able to set the digital repositories or develop it. This study followed the analytical descriptive approach; its results are conveyed to the repositories care of providing several methods of retrieval. And also found that 75% of the repositories used open source software. Prints program comes first by the rate of 45.8% besides to the repository care of setting its policies by the rate of 79.2%.

This study research has benefited from the analysis sides which could be followed when analysing and comparing and also knowing the software which is used and most common in the digital repositories.

Study no 3 entitled by the digital entities: its structure, its organization and its retrieval in the digital repositories on the internet: about a suggestive visualization. " This study sample aims to define the digital entities, its importance, its types, its aims and its structures and organizing and retrieving the digital entities on the internet and identifying the role of the digital repositories is saving and retrieving the digital entities and knowing the stages of building and testing the institutional digital repository of the information and libraries department in the faculty of arts in Menofia University. The study followed the descriptive analysis, the comparative analysis also and the experimental approach in building and testing the institutional digital repository. This study conveyed in its results to the diversity of the digital entities types and forms. The digital repositories are considered one of the most important storage places of these digital entities. There is generally a lack in the Arab usage of the free access of information. Most of the repositories adopt the standard of Dublin Core for data. This study recommended the necessity of establishing each University a digital repository for publishing its searches, strengthening the internet presence, encouraging the adoption culture on the free access of information using the conferences and the seminars and also awarding the importance of the digital deposit.

This study research is benefited from defining the digital repositories, its kindes, its aims, its structuring stages and the Arab attitude of the digital repositories.

Study no 4 entitled by Institutional repositories: Evaluation the reasons for non-use of Cornell University installation of Dspace.

The study aims to show the educational role of the digital repository in Oklahoma University in the United States of America besides to the research of the specialist repositories in Biology. The two researchers used the contrast as a study tool; the study sample is represented in 20 specialists in geosciences and biology. The study searched to the extent of accepting the study sample in order to provide their searches on the internet for information and knowledge exchange. The two researches used the experimental approach, the study showed the presence of the important role of the digital repositories educationally and the study showed that little sample wish to deal with the digital repositories and most of them doesn't have enough to deal with it and manage it.

This study research is benefited from the aspects of the establishing the digital repositories and knowing the specialist repositories besides to knowing the specialists attitude towards the digital repositories.
3 - The research problem.

The research problem lies on knowing, identifying the digital repositories in the Arab universities, analysing the digital repositories and comparing them, knowing its different departments, determining its advantages and disadvantages, also knowing the most important mutual aspects between them and answering the following inquiries: what are the components of the digital repositories structure in Arab universities? What are the search ways in the digital repositories in Arab universities? What are the advantages of the digital repositories in Arab universities? What are the disadvantages of the digital repositories in the Arab universities? What are the mutual aspects between the digital repositories in Arab universities?

4 - The research methodology

This search used two approaches to answer the proposed questions which are:

The analytical descriptive approach in order to conduct the process of analysing the digital repositories in universities which represent the search sample, this approach is considered an indirect contact with the individuals with reference to the documents, the records, the television and journalism interviews related to the study subject.

After choosing the suitable documents and records, the researcher analyses it based on the clear data in which it is mentioned. This technique is based on the conviction of clear occurrence of the members' attitudes in its writings, interviews and arts. The researcher should be sure of the validity of representing the document or the records used in the analysis in terms of its importance, its origin or its subjectivity.

This research used the comparative descriptive approach in order to compare the digital repositories in the Arab universities or the study sample. This approach searches seriously the causes of occurrence the phenomenon by conducting the comparisons between hem in order to discover its reasons and its accompanying factors.

This research is applied on a sample of the digital repositories in some Arab universities which are Alexandria University, Damascus University, Khartoum University, King Saud University, Petrol and Minerals University and Nayef University of the security sciences.

By searching on the internet and then choosing the first six depositories which were accessed.

5 - The analysis and comparison results

The digital repositories analysis ARE BROWSED IN THE Arab universities which represent the study sample as the following:

5 - 1 the digital repository in Alexandria University
The digital assets repository location is the system which the international institute of the information studies develops in Alexandria library for setting an institutional repository in order to keep the digital groups of Alexandria Library. The digital repository absorbs any kind of the multimedia for its flexible design. The digital assets repository provides the digital groups for the people by the searching and browsing services on line. The digital assets repository location is built especially for supporting the building, the using and keeping different groups of the digital resources. The location presents administration tools for facilitating the process of forming, managing and sharing the digital assets of Alexandria library. The system depends on the developed criteria and it could be merged with other systems.

5 - 1 - 1 the project's policy
Alexandria library provides through its electronic website and its index a number of the digital Arab books in seeking to
provide knowledge. The intellectual property of the available books on the website is finished to the knowledge of Alexandria Library, thus these books are put on the public domain while the location offers 5% only of the total pages or of the pages of the book which is protected by the intellectual property rights. All the books are provided in accordance with the items included in the Egyptian law and the international standards (Bern Walters agreements). However, some books are considered a special case as we couldn't find any information about its authors, its publishers and its date of issuance. These books are published digitally as it belongs to the works' category which is known internationally as the single works. In case of recognizing any employer on these works and it is provided completely by mistake, Alexandria library is informed till it is provided 5% of it only on the website. The web site of the digital assets repository currently includes the largest digital group in Arabic. The books are provided out the copyrights on the internet. While the protected books by the copy rights, the user can read only 5% of its content as it shouldn't be less than 10 pages. The books which are totally available, the system provides the protected books by the copyrights by reading it according to the number of copies which are actually provided in the library. Thus the library kept two copies of one book; the users can only read the digital copy at the same time. When someone left the book, the other can read it.

5 - 1 – 2 The repository advantages
* Determining the importance and the targets of the repository and providing it for the beneficiary.
* Brief Clarification of the repository policy and protecting the intellectual property.
* DAR website offers different options for displaying
* Sharing the books on other social networks.
* Evaluating the books, the integration with the other users by writing comments.
* The user can also put books which he chooses in files comprising a shelf of his own books.
* The existence of notification tools which provide the highlighting and underlying possibility on some text areas and adding the affixed notes.
* The system shows the various options to determine the search results which are a process known by the multi - faceted search.
* There is in the repository an advanced search which is determined by the search subject in order to access for the effective retrieval.
* The interface of the applications' software which is compatible with the settings of the transferring the representative case system ( RESTful API in order to hold the applications above the website.
* The discovery level which offers a search in the whole text during the whole group according to the users granted rights of accessibility.
* Searching in the whole text is based on the search server as it supports five languages: Arabic, English, French, Spanish and Italian.
* The system of managing the digitalizing process as a whole including the different stages, the system users, the files movement, indexing and the integration with the integrated systems of the libraries ( ILS ).
* The flexibility in managing a number of the projects at the same time with various numbers of subjects.
* The viewer of the digital book views the book based on the technology of image on text and OCR of the Arabic content letters reaching to the accuracy percentage ranged between 90% and 97%.
* The book viewer offers a number of the properties for the user's comfort like the morphological search in a whole text includes the books' address, the subject, the keywords, the content, highlighting the search results inside the book, the possibility of displaying a page or two pages, the notes tools like the highlighting, the underlining and the affixed notes, the direct display from the internet by displaying a page per page on the internet in order to facilitate the book's display using the slow speed internet besides to multi - languages display interface.
* Digitalizing the available subjects actually in the library or the collecting subjects from other institutions by a laboratory equipped with the latest technology for digitalizing various subjects like the slides in different shapes, the negative photos, the books, the scripts, the maps and the audio - visual subjects.
* Using the descriptive data store for storing the standards of transferring and encoding the descriptive data.

5 - 1 – 2 the repository disadvantages
* The users' interface in not at the level of the repository which is rich by its large contents of the digital assets.
* The policies despite of its existence, it is brief and it doesn't cover all the repository sides.
* The lack of instructive proofs for using the location.

5 - 2 the digital repository in Damascus University

Damascus digital University repository is the first Syrian digital repository as its idea is based on excluding the intellectual result of Damascus University of essays of the University's magazine in all its competences and the dissertations which are discussed in the University besides to the researchers' production of the posts outside the University aiming to support the digital content in the University and providing it for a slice exceeding the local society which may indicate the University support for the equality in accessing to knowledge principle.

The digital repository of Damascus University is an institutional repository I its kind, structure and work. It depends on Duplin Core standards in describing its content and supporting OAI - PMH protocol. It is established on open - source systems especially Dspace systems. The digital repository of Damascus University is considered a new norm of the scientific publishing of the intellectual production in Damascus University based on believing of the University as an academic institution which keeps its intellectual production, its availability and its assertion for the principle of knowledge sharing and achieving the scientific contact duly.

5 - 2 - 1 the repository advantages:
* Determining the idea and the targets of the repository
* The repository is used according to open source systems in a Dspace study system.
* Using Duplin core standards in describing its contents and its support for OAI - PMH protocol.
* The existence of clear, distinct and accurate strategies which cover all the repository sides.
* The possibility of searching in normal or advanced way.
* The possibility of browsing in the website by various options like the issue date, the author, the address or the subject.
* The repository supports two languages which are Arabic and English languages.
* The contact with the beneficiaries through the social communication websites like face book, twitter and LinkedIn, receive the emails and contain the personal scientific container of the user.
* The repository includes instructive proofs like the repository guide and the user guide.

5 - 2 - 2 the repository disadvantages
* The users' interface is medium viability and it doesn't include the new adds.
* The non-existence of referring to the digital assets amounts in the website.
* There is no possibility of users' polls and their evaluations in the content.
* Abbreviating the linguistic support on the Arabic and English languages.
* There is no technical support through the website.

5 - 3 the digital repository in Khartoum University

This repository includes about 175 documents in science field; its majority are full texts. This repository is established in July 2011. A lot of countries and universities are shared in its formation like King Louis University in Spain, America and British. The first support of this repository was from King Louis the seventh University in Spain. The repository was the path of the content administration's program. This repository was the repositories fruit by the institutional repositories program for the free access ( eifl ) and the support of the scientific information which means supporting the digital institutional repository projects. The user's interface is characterized by the existence of the new ads which enters the digital repository according to the search type whether it was subject, address or author's name.

5 - 3 - 1 the repository advantages:
* The user's interface is characterized by the good order with the existence of new adds which enter to the digital repository according to the search type whether it is the subject, the address or the author's name.
* The search is found in the repository in various options like the issue date, the author, the address and the subject.
the repository supports the Arabic and English languages.
using the DSpace system in building the repository.

5 – 3 -2 the repository disadvantages
* There is no identification for the idea and the target of the repository
* There is no identification for the repository policies.
* The website supports two languages only which are Arabic and English languages.
* There is no advanced search in the website to facilitate the effective retrieval
* There are no signs which signify the existence of the social communication with others.
* There is no possibility of users' pool and getting their evaluations.
* The user's interface doesn't support the new adds.
* There is no technical support through the website.

5 - 4 the digital repository in King Saud University
King Saud University joined the best universities which established the digital repositories. This may due to its believe in the digital repository importance for registering the intellectual production of the University and his providing by the free access for all method. The digital repository in King Saud University doesn't differ from the other digital repositories in Arab universities in building, components and the design method of the user's interface.

5 - 4 – 1 The repository's disadvantages
* There is no identifying for the repository basics
* The website supports two languages only which are Arabic and English languages.
* There is no advanced search in the website in order to facilitate the effective retrieval.
* There are signs which signify there is a social communication with the users.
* There is no possibility of the users' polls and getting their evaluations.
* The users' interface doesn't support the new adds.
* There is no technical support by the website.

5 - 5 The digital repository in Nayef University for the security sciences.
Nayef University for the security sciences is one of the specialist universities. It focuses on the security sciences in its different fields. It is considered one of the least universities which is specified in this field at the world's level. The University has set a digital repository for its studies by their members. This repository is a valuable and diverse repository. This is what we will see soon in this analysis.

5 - 5 - 1 The repository advantages
* Determining the idea and the targets of the repository
* using a Dspace study system in building the repository.
* The repository includes digital audio and visual assets and the photos
* The repository is specialized by the security sciences
* The search in the repository will be by the issue date, the author, the address, the subject and the signup date.
* We can contact with the repository by the social communication websites like twitter, Face book, LinkedIn and Google plus with the possibility of registering and signing up the websites.
* showing the latest adds in the home page.

5 - 5 - 2 The repository disadvantages
* There is no identifying for the repository policies
* The website supports one language only which is Arabic language.
* There is no advanced search in the website in order to facilitate the effective retrieval.
* There is no possibility of the users polls and getting their evaluations
* The users' interface doesn't support the new adds.
* There is no technical support by the website

5 - 6 The digital repository in King Fahd University for petrol and minerals
King Fahd University for petrol and minerals is considered one of the most important specialist international and Saudi universities. It is concerned with the studies and the searches about the petrol and minerals and the sciences which are concerned with it. This University occupies advanced positions in the international classifications of the best universities around the world. We shouldn't surprise the existence of the digital repository of the intellectual production in this University as we are used to its excellence in the science fields and what serves it.

5 - 6 - 1 The repository advantages
* Simple and distinctive user interface without costing.
* The browsing is done according to various options like the year, the subject, the author and the kind.
* The search in the repository is done according to two search types which are the simple and the advanced search.
* The advanced search in the digital repository in King Fahd University for petrol and minerals is characterized by the identification accuracy for the determinants' variety which provides this type of search. The determination starts with filling the determination boxes which include the full text, the address, the creators, the authors, the summary, the date, the undisciplined or the unrestricted search word and choosing the subject from the drop box which includes all the available subjects in the repository.
* The possibility of register provided the website's officials approval.
* The existence of an e-mail for the technical support in the website for helping the user.

5 - 6 - 2 the repository's disadvantages
* There is no identifying for the repository ideas and targets
* There is no identifying for the repository policies
* The website supports one language only which is English language.
* There is no advanced search in the website in order to facilitate the effective retrieval.
* There is no possibility of the users polls and getting their evaluations
* There is a full and complete absence of the social communication in the website
* Vagueness in building and working with the website.
* the signup provided the websites' officials approval is incompatible with the free access for information in the digital repository.

6 - The final deduction, the future works and the recommendations
After analysing the digital repositories in the Arab universities as a search sample. We are conveyed the following:

6 - 1 The final conclusion:
* The digital repository in Alexandria University is characterized than the other repositories by the massive amount and the social sharing of the books and the existence of notes tools which provide the highlighting and the underlying possibility on areas of the text and adding the affixed notes. The searching in full text is based on the search server as it supports five languages: the Arabic, English, French, Spanish and Italian languages and digitalizing the available subjects in the library or the collecting subjects from other institutions by a laboratory which is equipped with the latest technology for digitalizing different subjects like the slices in various forms, the negative photos, the books, the scripts, the maps and the audio and visual subjects.

* The digital repository in Damascus University is characterized by using Duplin Core standards in describing its content and its support of OAI - PMH protocol and containing the repository on instructive guides like the depositor guide and the user guide.
* the digital repository in Khartoum University is characterized by the user's interface which is characterized by the
existence of new adds which enter the digital repository according to the search type which is existed whether it was a subject, an address or author's name.

* the repositories of Nayef University for security sciences and King Fahd University for petrol and minerals are characterized by the specialism.

* the digital repository in King Fahd University for petrol and minerals is characterized than the other University's repositories by the more accurate advanced search by the way which include the full text, the address, the creators, the authors, the summary, the date, the undisciplined and the unrestricted search words and choosing the subject from the drop box which include all the available subjects in the repository.

* the digital repositories in Damascus, Khartoum, King Saud, nayef for security sciences, King Fahd for petrol and minerals University are blamed to the lack of determining its repositories policies.

* the digital repositories in Damascus, Khartoum, and King Fahd for petrol and minerals universities are blamed for the lack of the social communication through the social networks.

* using Damascus, Khartoum, King Saud and Nayef for security sciences DSpace systems in building its repositories.

* the digital repositories in Khartoum University is blamed for the lack of content from its digital assets.

6 - 2 the future works and the recommendations

This study recommends conducting studies about the following:

* the systems and approaches of building the repositories in Arab University.

* the searching methods in the digital repositories in Arab universities.

* Comparative study with the digital repositories in Arab universities.

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