

الجامعات المصرية في إطار مجتمع المعرفة وتحسين ترتيبها في  
التصنيفات العالمية

أماني وحيد جرجس صالح

## الجامعات المصرية في إطار مجتمع المعرفة وتحسين ترتيبها في التصنيفات العالمية

أماني وحيد جرجس صالح

مدرس مساعد، قسم التربية المقارنة والإدارة التعليمية، كلية التربية، جامعة المنيا، مصر

amanywahed@mu.edu.eg

قدمت للنشر في 1/9/2019م قبل للنشر في 1/11/2019م

المخلص: هدف البحث إلى تعرف أبرز التصنيفات العالمية؛ موضحاً المعايير والمؤشرات التي يتم على أساسها بناء وتقييم كل تصنيف، وتوضيح دور الجامعات في مجتمع المعرفة، وعلاقة هذا المجتمع بالتصنيفات العالمية للجامعات؛ وذلك لتحسين ترتيبها في التصنيفات العالمية للجامعات على ضوء مجتمع المعرفة، في سبيل ذلك استخدم البحث المنهج الوصفي. تناول البحث أبرز التصنيفات العالمية للجامعات وهي: تصنيف شنغهاي، والويومتركس، والكيو أس، وتايمز؛ وذلك لانتشارها في الأوساط الأكاديمية العالمية. وعرض المعايير والمؤشرات التي تعتمد عليها في عملية التقييم، كما تناول دور الجامعات في إطار مجتمع المعرفة، وعلاقة هذا المجتمع بالتصنيفات العالمية للجامعات. وأخيراً تناول كيفية تحسين ترتيب الجامعات في التصنيفات العالمية في المحاور الثلاث وهي: محور الموارد البشرية والذي يتمثل في أعضاء هيئة التدريس والباحثين من خلال إعدادهم على المستوى التربوي والبحثي والتجريبي، وتأهيلهم وتنمية مهاراتهم اللغوية والتقنية والأكاديمية، ومحور البحث العلمي من خلال تشجيع النشر الدولي في المجالات العلمية المتخصصة محلياً وعالمياً، وبناء مراكز البحوث المتخصصة، وتشجيع البحوث المشتركة بين الأقسام؛ والتي تخلق بيئة إبداعية وابتكارية تساعد على التميز، ومحور تكنولوجيا المعلومات من خلال إدارة المراجع والمعلومات الالكترونية، وتحديث البوابات الالكترونية للجامعات، وبناء المحتوى الرقمي للمقررات الدراسية وتحويلها لمقررات الكترونية تفاعلية.

الكلمات الدلالية: مجتمع المعرفة، التصنيفات العالمية للجامعات

<http://dx.doi.org/10.29009/ijres.3.2.7>

## **Egyptian Universities in Knowledge Society and Improving their Ranking in the World University Rankings**

Amani Wahid Jerges Saleh

Assistant Lecturer at Dept. of Comparative Education & Educational Administration, College of Education, Minia University, Egypt

amanywahed@mu.edu.eg

**Received in 1st September 2019**

**Accepted in 1st November 2019**

**Abstract:** The aim of the current research was to identify the most prominent World Rankings, explaining the criteria and indicators on which each ranking is based, clarifying the role of universities in the knowledge society, and its relation to World Rankings; in order to improve their rankings in light of the knowledge society. The research covered the most important World University Rankings: The Shanghai, Webometrics, QS and Times, presenting their Criteria and indicators, the role of universities in the knowledge society and its relationship to the World Rankings. Finally, the research addressed how to improve the university rankings in three axes: human resources, scientific research and information and communication technology.

**Keywords:** Knowledge Society, World University Rankings

## Introduction

The University is a center of knowledge and enlightenment of thought as well as a basis for the development of society. This makes it necessary for the university to play a role in contributing to the building of a knowledge society in our country, as well as re-evaluate its performance to determine its ability to survive in the global competition. The global rankings of universities have become a means to enhance that competition, the motive for change in universities, and a factor to attract students to join them. This is due to the role of global rankings that gives universities a global reputation, and puts them in the list of the best outstanding universities in the world; through evaluating them on the basis of certain criteria and agreed indicators by a number of international institutions that are responsible for universities ranking.

With the scientific and technological advances based on the human mind, microelectronics, and computer's role in generating, organizing, storing, retrieving, exchanging, and communicating knowledge rapidly, the world has increasingly become a knowledge-rich society. As the world has moved beyond the society of industry into a society featured by an abundance of knowledge, which is called Knowledge society (1). This society is marked by its effectiveness in the production and development of knowledge, not just mastering how to make good use of it. Progress in the world today is measured by the standards of the ability to produce, update, and accumulate knowledge, and this area - the field of knowledge - has become the focus of competition between the developed countries and societies, which compete among themselves for the acquisition of sources of power, reverence and civilizational superiority (2).

In the knowledge society, the University is a knowledge-intensive, scientific-research institution whose core activity is the production of

knowledge (scientific-research), or improvement of knowledge (new uses of knowledge) or learning and sharing of knowledge (education). From the perspective of the knowledge society, the university plays a role that is similar to that of the factory in the industrial economy. As it represents the factory that produces the new knowledge (scientific research), expertise (learning), dissemination of knowledge (education), and distribution (books and documentary studies) (3). Building a knowledge society requires highly skilled human cadres who are able to spread and employ knowledge through openness to the world, focusing on qualitative scientific research, having an interest in the transfer and exchange of knowledge with others, and using modern technologies (4).

The relationship between the global rankings of universities and the knowledge society lies in the fact that prestigious international universities pursue the approach of investment in knowledge, which is one of the most important indicators of the transformation of societies into a knowledge society. Moreover, the relationship between knowledge and competitive advantage is evident in the possibility of generating knowledge to lead to creativity, which in turn provides the foundations of the competitive advantage. Therefore, universities should take advantage of their stock of knowledge, human cadres and scientific and material components to move towards the production of knowledge and turning it into products, services and methods of value and quality in order to achieve a competitive advantage that ensures their continuity and competitiveness in a competitive society. Undoubtedly, this will be possible only through their distinct human resources that generate and produce knowledge with their innovative stock of knowledge that qualifies them for local, regional and even global competition (6) .

Global rankings of universities play a pivotal role in making higher education institutions more global, achieving greater quality in teaching, increasing their productivity of scientific research and making the best use of human as well as material resources, in addition to their role in measuring quality through measuring the institutional performance of teaching, scientific research and community service(7), developing the research and academic performance of universities, and protecting them from stagnation and decline. As when a university feels that it is the only one that provides educational and research services without the presence of other competing universities, this leads to laziness to renew and develop its activities and programs in order to keep pace with the developments of the age of scientific and technological progress. The rankings also push universities to learn about and benefit from the experiences of advanced universities, maintain their human cadres, reduce human capital flight (brain drain), and direct and manage research towards community service (8) .

Despite the importance of the rankings in the internationalization and competitiveness of universities, most Egyptian universities are either outside or lag behind in international rankings, as a result of the fact that universities' scientific research do not tackle real problems, their focus on their educational mission at the expense of their research one, the lack of production of new knowledge, the failure of the university scientific research to pursue the latest achievements of advanced technology, reliance on the individual efforts of the faculty members, the absence of the private sector's support for scientific research, the predominance of formalities, routines and appearances in quality works rather than the spirit and thought of quality itself (9).

## Research problem

By reviewing the study of (Said & Yassin, 2012)<sup>(10)</sup> which surveyed the global ranking of universities of the top 200 universities in 2012, it was found that there is no Egyptian or Arab university within this ranking. Moreover, the study of (Baknam, 2015)<sup>(11)</sup> concluded that although the world rankings are very important in improving the competitiveness of universities, and in enabling them to attract new students and organizations interested in scientific research, Cairo University has appeared only in the Shanghai ranking. However, in the QS ranking, several Egyptian universities were there, namely: Cairo University, Ain Shams University, Al-Azhar University, and Alexandria University, while the rest of the universities did not appear, and no Egyptian university appeared in the Times Higher Education World University Ranking during 2015.

In addition, Abed-Rabbo (2015)<sup>(12)</sup> indicated the absence of Mansoura University from the world rankings for a number of reasons, including: poor quality of the educational process and scientific research and the poor qualification of faculty members at the university. Abed-Rabbo's study set mechanisms to achieve the ranking criteria, the most important of which is the need for a vision, strategic goals and a plan for the university for bridging the gap between reality and hope compared with the performance of international universities, upgrading the level of graduate studies and scientific research, internationalizing the university by attracting foreign students and professors, and developing programs and establishing new research centers.

This is confirmed by the government's strategy for the development of higher education in Egypt (2015-2030), that is, the imperative for exerting more efforts to develop the Egyptian universities, and to raise their competitiveness in international ranking. Because only specific Egyptian universities, namely Cairo University, Ain Shams University and Alexandria University, were

present in the Shanghai ranking. The National Strategy for Science, Technology and Innovation explained the need to increase Egypt's production of knowledge and to raise the world rankings in the 40 best countries in the world in international publishing <sup>(13)</sup>.

Through examining the websites of the world's top rankings of universities during the year (2017-2018), it was found that only three Egyptian universities appeared in the Shanghai and QS rankings, namely: Cairo University, Ain Shams University and Alexandria University, in the late range of (401-500) and (701-800). While, in the webometrics ranking of world universities, several Egyptian universities have appeared, the top of which was Cairo university (746/11998), followed by Alexandria university (1204/11998), and the rest of the universities were in late rankings. Similarly, the Times Higher Education World University Ranking, a limited number of Egyptian universities appeared. The highest ranking was in the range of (601-800). That makes clear the absence of a large number of the Egyptian Universities in Shanghai and QS rankings, and the existence of some in the late rankings in the two other rankings. Thus, Egyptian universities should recognize the importance of being present and prove themselves internationally, so that they can withstand in that trend.

Based on the above-mentioned studies, it is clear that most of the reasons for the absence and low ranking of universities in the world rankings are due to the role of the cognitive aspect, such as the international publishing, the knowledge and the research production of faculty members, and the role of the technological aspect in raising the ranking of universities in the world rankings. The findings of the study of (Ahmad: 2016) aimed to clarify the role of the cognitive and technological aspect in improving the ranking of Egyptian universities in the world rankings <sup>(14)</sup>. Besides, the recommendations of the



international conference entitled "University Education in the Knowledge Society: Opportunities and Challenges" which called for the development of universities and their improvement to cope up with the constantly developing reality for building research universities, and preparing the student-researcher who is the producer of new knowledge and its technical application, as well as to maximize the role of e-learning with an interest in developing the skills of the faculty members, making use of the Central Library and connecting it to the international information network<sup>(15)</sup>.

Hence, the overall aim of the present research lies in identifying the world's most prominent rankings and their criteria and indicators, the role of universities in the knowledge society and the relationship to the global rankings of universities, and how to improve the ranking of universities in light of the knowledge society.

### **Research questions**

1. What are the most prominent world university rankings and the criteria and indicators on which they depend?
2. What is the role of universities in light of the knowledge society, and the relationship of that to the world university rankings?
3. How can universities be improved in world rankings in light of the knowledge society?

### **Research objectives**

The current research aims to identify the most prominent world university rankings, presenting the criteria and indicators on which each ranking is built, and to clarify the role of universities in the knowledge society, in order to improve their ranking world university rankings in light of the knowledge society.

## Research significance

The significance of the current research is divided into two parts: theoretical and practical:

### Research theoretical significance

- The present research is based on the variety of the fairly comprehensive world ranking criteria and indicators that can be used to evaluate the performance of Egyptian universities, to determine their global competitiveness, and to compare them with other universities.
- Research significance lies also in the use of the knowledge society, which corresponds to the nature of the present era of "technical revolution", and the need to generate new knowledge or apply existing knowledge, so that knowledge is said to be thirsty for more knowledge.

### Research practical significance

- The current research is an attempt to understand and clarify the criteria and indicators on which universities are ranked globally, and to clarify the role of universities in the knowledge society, in order to improve their ranking in the global rankings in light of this knowledge society.

### Research delimitations

**Objective:** The research examines the world rankings of universities, namely the Chinese shanghai, Spanish Webometrics, the British QS, and the British Times higher education magazine, for its wide spread in the global academic community. It also addresses the three axes of the knowledge society: human resources, scientific research and information technology.

## Research Terms

### 1. World Rankings of Universities.

It is an international standard of excellence for the ranking of higher education institutions<sup>(16)</sup>. From an academic point of view, it is defined as the extent to which the university conforms to the criteria that have been established as the basis for evaluation, which helps to identify the level of the university, the programs it offers and the scientific activities available therein, and to preserve the competitive position of the university among other universities<sup>(17)</sup>. Finally, it is operationally defined as a set of criteria and indicators agreed on by the international bodies and institutions, and the statistics and surveys applied by students, graduates, the labor market and the outside community, whose performance is assessed and ranked in a descending order in the rankings lists according to the best performance.

### 2. Knowledge Society.

The Arab Human Development Report defines it as a society that is essentially based on the publishing, production and functionalization of knowledge effectively in all areas of community activity, namely economy, civil society, politics, private life, and improvement of the human condition, all of that means the establishment of human development<sup>(18)</sup>. It is also a group of people with similar interests, seeking to generate knowledge, create a culture of knowledge and share it, and develop applications that work through knowledge mechanisms, relying on information and communication technology, to achieve the development of the individual and society<sup>(19)</sup>. It can be operationally defined as a society based on the production, generation, use and dissemination of knowledge by faculty members and graduate students of universities when conducting scientific research, through modern technologies, in order to improve their ranking in the world rankings of universities.

## Research methodology

The current research adopts the descriptive method due to its relevance to the nature of the research. It increases the understanding of the educational phenomenon, helps reach the facts about the present circumstances, and also develop important relationships between current phenomena and interpretation of the data<sup>(20)</sup> to identify the most prominent world rankings of universities, their standards and indicators, and to clarify the role of universities in the knowledge society, and so; to improve their ranking in the world rankings in light of that society.

## Review of Literature

A huge body of Arab and foreign literature has focused on ways to reform, develop and promote university education, while there are a few studies on the world ranking of the Egyptian universities. Also, the studies which explored the topic of knowledge society focused on evaluating universities in light of the knowledge society, as well as the role of university education in building a knowledge society, while those studies did not address the level and status of universities globally under the knowledge society. In addition, there are no studies combining the global ranking of universities with the knowledge society. As a result, the current research addresses the relevant studies and the current research position among these studies. Following is a review of the most important previous studies related to the current research topic, which have been classified into two axes as follows:

- **The first axis: studies on the world rankings of universities.**
- **The second axis: studies on the knowledge society.**

### **The first axis: studies on the world rankings of universities**

Using the descriptive analytical method, **Muhammad (2016)** aimed to identify the reality of Egyptian universities, especially the University of Mansoura to identify the obstacles that prevent the Egyptian universities from reaching the ranks of top-ranked world universities, and the most important educational requirements necessary to upgrade the ranking of the Egyptian universities in the world rankings. The study revealed a number of important findings represented in the existence of a number of obstacles that prevent the Egyptian universities from reaching the ranks of the top-ranked world universities: namely the physical and technological obstacles, human obstacles, and international publication obstacles. Also, a number of educational requirements necessary to upgrade the ranking of the Egyptian universities in the world rankings were reached, namely the physical and technological requirements, human requirements, academic requirements, and scientific and practical requirements <sup>(21)</sup>.

In addition, the study of **Tuhami & Yassin (2012)** aimed to identify the international criteria and indicators of the ranking of universities and research centers, the reality of the ranking of Egyptian universities in the lists of world rankings, and the reasons for the absence of Egyptian universities from those rankings. To this end, the present study adopted the descriptive method. The most important findings of the study included the need to update the university's, coordinate with the international journals website to publish research, and develop a comprehensive research plan. The findings also revealed the need to develop procedures and facilities to raise the percentage of enrolled students in graduate studies, and the need to introduce programs that meet the needs of the labor market, as well as interest in training human

resources in universities in international research and publication and patenting (22).

While **Fung (2017)** conducted a descriptive study aimed to identify the role of knowledge in the research productivity of faculty members, develop solutions to improve research productivity to improve their ranking in the world rankings of universities. The study revealed a number of findings, the most important of which are: knowledge has an effect on the research productivity of faculty members, which in turn improves the university's performance in the world ranking of universities, and increases its reputation and prestige, by generating and publishing new research ideas, providing funding sufficient for research. This guarantees preserving the performance of the institution over time.

Additionally, the Study of **Tiwari & Yeravdekar (2014)** aimed to survey and examine research that investigated the world rankings of universities, identify the reasons why Indian universities did not appear in these rankings. To this aim, the survey method was utilized, and the study tool was to analyze the previous studies. A number of findings were reached, the most important of which are: the existence of deficiencies in the higher education system in India which made it outside the world rankings of universities, such as the lack of production of scientific knowledge, lack of scientific research, the small number of research publications in international journals with a high impact factor, and the weakness of the academic system as well as teaching at Indian universities (24).

### **The second axis: studies on the knowledge society in university education.**

**Mahmoud (2016)** aimed to shed light on the intellectual and societal foundations of the concept of knowledge society, the role of the university in building that society, and to identify the obstacles facing the university in

building a knowledge society, and presenting proposals to activate the role of emerging universities in the localization of the knowledge society. To this aim, the study adopted the descriptive analytical method. The study findings showed the necessity of including the knowledge needs of the community among the research priorities, marketing and publishing the findings of research. The study developed some proposals, the most important of which is planning the role of the university in building the knowledge society. This planning includes a set of aspects, such as planning for strategic policies, planning to provide information infrastructure and access to knowledge, planning for building the human and institutional capacity, and planning for information cooperation <sup>(25)</sup>.

Adopting also the descriptive analytical method, the study of **Al-Yahya (2016)** examined the role of higher education institutions in the transformation into a knowledge society from the point of view of faculty members at Saudi universities, by analyzing the role these universities played in producing, generating, disseminating and investing in knowledge. It also aimed to examine the challenges encountered by Saudi universities in transforming into knowledge society. The study findings showed the limited role of universities in the production and dissemination of knowledge. While the development of this role is evident relatively with regard to its employment and investment. It was also revealed that there are challenges facing these universities in this area, the most important of which is the focus of universities on the transfer of knowledge without trying to develop it. The study recommended the development of a strategic plan for scientific research, motivating faculty members financially and morally to contribute effectively to the transformation of the knowledge society in the global perspective <sup>(26)</sup>.

Whereas, **Chen et al (2009)** aimed to explore the factors influencing knowledge sharing, identify students' attitude towards knowledge sharing, their ability to participate in its electronic production, and develop a model for the exchange of knowledge online virtually in a society of knowledge and learning. The study adopted the descriptive analytical method. The study reached a number of results, the most important of which was that there are factors that contribute to the exchange of knowledge and its application, including: the network of social relations among the members of the knowledge society, such as the students and professors and the extent to which they use technology contribute to building, applying and sharing knowledge, and self-efficacy in the use of the internet represents a motivation for a higher level of performance. The findings showed also the need to develop a training policy for developing students' technological skills as well as their ability to discover and exploit knowledge in the virtual community <sup>(27)</sup>.

Besides, the study of **Hoffman & Valimaa (2008)** aimed to analyze the role of higher education in the light of the knowledge society, identify the current challenges facing higher education, especially in the field of scientific research, and identify the changes in higher education and scientific research resulting from the knowledge society at the national, regional and global level. The study findings revealed that the knowledge society became one of the most widespread concepts, especially in post-industrial and post-modern societies, there are challenges facing higher education institutions in the knowledge society, namely the lack of knowledge production to experimental research to diagnose the present time needs, the scarcity of studies addressing the issues of the near future, the lack of information technology studies on networking and publishing facts, and the lack of interest in the practical life of the human resources which they deal with in terms of their preparation and training <sup>(28)</sup>.



## **General commentary**

The current research is in agreement with previous studies in dealing with the topic of world ranking of universities. The absence of Egyptian universities from most rankings as illustrated by the study of (Said & Yassin, 2012). It is also in consistency with the study of (Mohammed, 2016) in the existence of human technological and research obstacles that hinder university's existence in world rankings. This study benefited the current research in identifying the three axes resulted from the poor knowledge production of universities and which make them absent from those rankings, such as the Indian universities, as indicated by the study of (Tiwari & Yeravdekar, 2013). As high productivity of research leads to higher ranking, as shown in the study of (Fung, 2007).

The present research benefited also from the studies that investigated the topic of knowledge society, such as the study of (Al-Yahya, 2016) which explored the role of universities in building a knowledge society, in addition to the studies of (Hamdi, 2016) and (Hoffman & Valima, 2008) which focused on the three themes of the knowledge society, which were utilized to improve the ranking of universities, although they are the same criteria of most of the world rankings.

## **Theoretical framework.**

### **First: The most prominent world rankings of universities.**

There are many world rankings of universities, which differ in the criteria and indicators on which they depend in the evaluation and comparison process among universities. The current research was limited to addressing the world's top rankings of universities. They are as follows:

## 1. Shanghai Ranking.

One of the world's most popular university rankings, and it is a Chinese ranking that appeared in July 2003 as the first that published the world's universities rankings. This ranking is published annually by Jiao Tong Shanghai University of China, known as Shanghai Jiao Tang University, and is called the Academic Ranking of World Universities. It is referred to as ARWU, and is considered by scientists to be the most objective, impartial, unbiased ranking, and one of the most widely accepted in academia <sup>(28)</sup>. It examines (2000) universities in the world out of approximately (10,000) universities registered in UNESCO that had the initial qualifications for the competition. The second step of the examination is the ranking of (1,000) universities, which are again subject to competition for a position in the best (500) universities in September each year <sup>(30)</sup>. The first (100) universities are arranged respectively, and then (400) universities are ranked in levels or ranges: (101-151), (152-200), (201-302), (303-401) and (402-503) <sup>(31)</sup>.

This ranking has attracted the attention of universities, governments and the media around the world, and several universities have strived to meet its ranking criteria to become among the so-called elite universities. The Chinese universities have reformulated their strategic objectives taking into account the ranking criteria. This ranking is characterized by many points: the ranking's devoid of any commercial objectives, the independence of the institute responsible for ranking, the low ranking of Chinese universities (outside the top 100 universities in the world), and the progress of Taiwanese universities in this ranking despite the sensitivity of relations between the two countries during the last five years, the reliance of the ranking on data that can be accessed at any time easily, the detailed publication of the final results of each issue, as well as

the transparency of the procedures followed in the ranking<sup>0</sup>, and this ranking is based on four main criteria, as indicated in the following table<sup>3</sup>.

Table (1) Criteria and indicators of Shanghai Ranking

| Criteria                      | Indicators  | Symbol | Relative Weight |
|-------------------------------|---|--------|-----------------|
| <b>Quality of Education</b>   | University graduates with Nobel Prizes, Fields Medals, or the Turing Computer Science Award.  | Alumni | 10 %            |
| <b>Quality of Faculty</b>     | Number of university members who have received the Nobel Prize, the Fields Medal of Mathematics or the Turing Prize in Computer Science.  | Award  | 20%             |
|                               | The best citations of researchers in (21) academic specialization.  | HiCi   | 20%             |
| <b>Research Output</b>        | Number of researches published in Nature and Science Journals.  | N&S    | 20%             |
|                               | Number of researches referred to in The Science Citation Index Expanded (SCIE), The Social Sciences Citation Index (SSCI), and Arts and Humanities Citation Index (AHCI).   | PUB    | 20%             |
| <b>Per Capita Performance</b> | The university's academic performance indicator: it is calculated by the scores obtained by the university in the first three criteria relative to the number of academic staff at the university, and if it is not possible to collect information from the university about that indicator, its score will be distributed among the remaining five previous indicators. | PCP    | 10 %            |
| <b>Total</b>                  |   |        | <b>100%</b>     |

## 2. Webometrics Ranking

It is a world ranking issued by the International Spanish Cybermetrics Lab, a unit of the National Research Centre in Spain, known as the Supreme Council for Scientific Research (CSIC). It is linked to the Ministry of Education in Madrid, and contains a research group of specialists in international network data. Its mission is to observe the scientific and academic research activities and scientific publications of universities on the Internet<sup>(4)</sup>. It is issued semi-annually since 2004 in the months of (January / July) each year. This ranking covers more than (17000) institutions of higher education around the world, including about (500) Arab universities, and ranks the first (12000) universities in the world. It also ranks the first 100 universities by continent or region (35).

After completing the initial ranking process and in order to amend the report and its errors, a catalogue of world universities is published through the Spanish website attached to it a request of information on the errors or gaps that each university sees in its data so that it can adjust their ranking before the final report is announced. Many countries responded by explaining that there are other universities -in these countries-that have not been included in the rankings, changes in the websites (URL)of these universities, in addition to many other mistakes that the Cybermetrics Lab can correct. Indonesia is one of these countries, whose universities has become well covered by Spanish Webometrics ranking<sup>(36)</sup>.

The importance of this ranking lies in the vital and growing role of websites in the dissemination of scientific research through the so-called E-Journals, in addition to ease, speed, low cost, and accessibility at all times and anywhere. These sites also show the activities of professors and researchers, and allow the possibility of contacting between them and their students. Moreover, the outcome of these factors enriches the performance of the

university, and highlight its position, and this evaluation does not depend on the design of the website, nor the number of visits to it, but depends on the evaluation of the performance of universities through their websites <sup>(37)</sup>. This ranking is based on four indicators, and the following table shows the criteria and indicators of Webometrics and their relative weights <sup>(38)</sup>.

Table (2) Webometrics Ranking Criteria and Indicators

| Criteria             | Indicators   | Relative Weight |
|----------------------|--|-----------------|
| <b>Visibility</b>    | The number of external links received by the Webometrics from other sites. (50%)   | 50 %            |
| <b>Effectiveness</b> | Presence: refers to the total number of web pages included in the university's website, including the sub-sites and directories as indexed by Google. (20%).   | 50%             |
|                      | Openness: Openness means the university's efforts in creating research repositories, measured by the number of rich files (docx, pdf, ppt, doc) posted on Google Scholar search engines. (15%)   |                 |
|                      | Excellence: refers to the number of research papers published in international journals with a high impact factor and it is limited to the most cited research papers. They often represent 10% of the university's research output. (15%) |                 |
| <b>Total</b>         |  | <b>100%</b>     |

### 3. QS Ranking.

It is a ranking issued by Quaquarelli Symonds, a non-profit organization located in London with branches around the world. It was founded in 1990 and started its work in 2004 with the ranking of the best (800) universities in the world. QS ranking continued to be published until 2009 in cooperation with

<http://dx.doi.org/10.29009/ijres.3.2.7>

The Times magazine, under A joint name (Times Higher Education- QS World University). However, in 2010 the Times Higher Education splited from QS and began to issue a new ranking with the participation of Tomson Reuters. <sup>(39)</sup>.

The ranking covers four strategic aspects of a higher education institution: scientific research, employability, educational quality and global efficiency. It is published by the Times supplement, and gives a great deal of attention to the views of experts (40%), in addition to other elements. The ranking currently evaluates about (2000) higher education institution, and ranks (700) of them, but the famous list of the ranking includes the first (400) of them, and the rest are ranked in groups or categories of (401-450), (451-500), and so on <sup>(40)</sup>.

This ranking has achieved international reputation among the educational institutions and scientific research, and what distinguishes it is that it does not address superficial indicators that may hide more than the complex conditions within each university, but delves deeper in the analysis of the components of these universities to evaluate the level of education provided by the universities ranked, and the quality of their basic and applied research, and the characterization of the abilities of their graduates in the basic and higher educational stages, in addition to their international position. Therefore, this rank QS ranking sat criteria in the form of measurable variables <sup>(41)</sup>. The following table shows the ranking criteria <sup>(2)</sup>:

Table (3) QS ranking Criteria and Indicators

| Criteria                        | Indicators   | Relative Weight |
|---------------------------------|--|-----------------|
| Academic Reputation             | Measured by surveys that survey experts' views on universities from around the world.  | 40 %            |
| Quality of Education            | The ratio of faculty members to university students.   | 20 %            |
| Research                        | - Number of published researches of faculty members.<br>- Number of citations in international research.   | 20 %            |
| Graduate skills in labor market | The views of external employers and employing institutions on the graduates in terms of their ability to innovate, their creativity and their career behavior. | 10 %            |
| International University Vision | -The proportion of foreign faculty members to local faculty.   | 5 %             |
|                                 | -The ratio of foreign students to local students at the university.  | 5 %             |
| <b>Total</b>                    |  | <b>100%</b>     |

#### 4. Times Ranking

The official recognition of the Times ranking dates back to 2010, one year after its official split from the QS ranking. THE ranking is the most comprehensive and up-to-date model of past experiences in this field according to many observers of the development in the field of world ranking of universities and based on the keenness of its operators to draw a different path than in other rankings, which is reflected in its methodology of work, and the set of indicators adopted in its evaluation of universities <sup>(43)</sup>

The Times magazine has adopted a new methodology in the evaluation of universities after reviewing the information collected about world universities and methods of evaluation. The magazine has developed various methods to increase the accuracy, balance and transparency of the annual information schedules of universities, and has added more realistic performance indicators, and more sophisticated in-depth analysis methods. To increase credibility in its ranking of universities, the magazine relied heavily on its close collaboration with the Thomson Reuters Foundation, which is considered to be the world's first in research informatics and analysis<sup>(44)</sup>.

The Times ranking is considered to be among the top world rankings in the global academic community, and has a great credibility among universities, due to its reliance on five key criteria and 13 indicators, carefully selected with great interest, to reflect the comprehensiveness and balance of university activities in the performance of their academic, research and social functions, what makes it seen as the only ranking that fully measures the basic functions of the university<sup>(45)</sup>. It is based on five main criteria, shown in the following table <sup>(44)</sup>:

Table (4) Times raking criteria and indicators

| Criteria                            | Indicators  | Relative Weight |
|-------------------------------------|---|-----------------|
| Teaching & The Learning Environment | <ul style="list-style-type: none"> <li>- Views of the Experts and evaluation committee on the teaching process. (15%)</li> <li>- Calculating the ratio of students to faculty. (4.5%)</li> <li>- The ratio of doctoral degrees to bachelor's degrees; the big number of PhD students reflect the university's activity. (2.25%)</li> <li>- The University's commitment to supporting new generations of academic individuals and its ability to attract graduate students. (6%)</li> <li>- The income of the institution compared to the total number of the faculty (2.25%)</li> </ul> | 30%             |



| Criteria                                    | Indicators   | Relative Weight |
|---|--|-----------------|
| Citations & Research Influence              | - Reflects the extent of the university's contribution to the dissemination of knowledge and is measured by identifying how often a work published by the university is referred to at the scientific level using the website databases (Thomson Reuters) which include all the sciences and magazines indexed; It means the average citations of the scientific paper according to the Thomson Reuters database, which is published in the last five years before entering the ranking. | 30%             |
| Research & Volume, Income and Reputation    | The university's reputation for research excellence among its counterparts is based on an annual survey of at least 10,000 academics around the world. (18%)   | 2.5%            |
|   | The ratio of research production through the percentage of the research resulting from the university to the number of its faculty, especially research published in international journals with a high academic reputation. (6%)  |                 |
|   | Research income is meant by the income of the university from its research efforts and projects, such as the research grants in which it participates. (6%)  |                 |
| Industry income & innovation                | <ul style="list-style-type: none"> <li>- Innovations and inventions offered by the University to industry.</li> <li>- The amount of income that the University has from the research it provides to the industry compared to the faculty.</li> </ul>   | 7.5%            |
| International & Staff, Student and Research | <ul style="list-style-type: none"> <li>- The proportion of foreign faculty members as compared to local faculty. (2.5%)</li> <li>- The proportion of foreign students to local students. (2.5%)</li> <li>- Total international award-winning research publications or participation in international research or projects. (2.5%)</li> </ul>   | 100%            |
|   |  | 100%            |

It is clear from the above-mentioned rankings that they addressed various criteria, and participated in developing some of them, most notably: the standard of scientific research and its impact on the criterion of quality of education, the website of the university, and the reputation of the university. In the Shanghai ranking and the ranking of Times, the relative weight of interest in scientific research and publishing reached (60%). In addition, The Qs ranking focused on the quality of education and the relative weight of this criterion reached (70%), distributed on the experts' evaluation, the percentage of students to faculty, the proportion of foreign students, and the percentage of foreign faculty, while webometrics' ranking is concerned with the size of the university's website and its contents from academic and research activities .<sup>(47)</sup>

## **Second axis: the role of the University in the knowledge society, and its relationship to world rankings.**

### **1. The university's role in the knowledge society.**

Building a knowledge society is the main function of the University in the present era, as a result of its well-known functions in a knowledge framework that are based on the production of knowledge through research, dissemination through teaching, and its application in the service and development of the society, and these are the pillars of the knowledge society. Although all higher education institutions should practice in the processes necessary to transform into a knowledge society, the greatest burden is mainly the responsibility of universities, because of their advanced technological capabilities, contemporary programs and curricula, qualified human cadres, and enlightened academic leaders.<sup>(48)</sup>

There is no significance for university education that does not keep pace with cognitive changes, and there is no significance for a society that does not react to changes, nor contributes to its creation and development. The university

education system should be more diverse in its subjects in proportion to the social goals of knowledge in a society, and this means researching the role of the university in achieving the elements of the knowledge society through: preparing graduates capable of creativity and innovation, keeping up with scientific and technological developments, focusing on knowledge and sharing it with other universities, integrating technology into university education, and employing productive knowledge in institutions and sectors of society<sup>(49)</sup>.

Universities play a prominent role in contributing to the building of the knowledge society through knowledge/cognitive activities, especially since all cognitive activities are one of the goals of the establishment of universities and the development and advancement of nations. These activities include generating knowledge or producing knowledge through research and development, disseminating knowledge through education, training and the media, and the use and functionalization of knowledge in the provision of services, products and the advancement of humans <sup>(0)</sup>. This requires the University to develop human resources development policies in terms of its objectives, programs and mechanisms, supporting scientific research and its management, establishing research excellence centers and information centers, benefiting from research findings, cooperation and coordination with different countries in research activities, exchange of experiences and information through exchanges and academic participation under a comprehensive research plan, and the use of technology to build an infrastructure for communications and software. <sup>(51)</sup>

The development of knowledge societies is done through providing the infrastructure, the ability to change sustainably, which can lead to the institutionalization of knowledge acquisition, its exchange and creation within and outside the university, and the use of information technology that is a tool

for the building, exchange, and creation of Knowledge economies, societies, cultures in universities and around the world<sup>(52)</sup>, The knowledge society is global, as knowledge generation has become not only a competitive advantage but a goal that universities seek to achieve. There are some actions that help the university to produce knowledge<sup>(53)</sup>:

**A.** Enhancing the process of disseminating knowledge through a variety of sources, facilitating the process of distribution and cooperation, sharing experiences and knowledge, and having greater partnership in research, learning and exchange of experiences.

**B.** Classifying and tabulating new knowledge, which leads to an easy presentation of knowledge, and to the ability to communicate with sources of information and knowledge better, and to help<sup>(52)</sup> create new cognitive trends.

**C.** Ensuring quality assurance, as everyone can produce and disseminate knowledge, which requires the possibility of criticism, and clear criteria for publication.

**D.** Improving the productivity of education by providing a virtual community through which knowledge is disseminated and communicated to the largest number of researchers. This increases the value of this knowledge.

**E.** Evaluating and criticizing knowledge, as there are more specialists who are able to review and verify the validity of the experiments and results in different circumstances.

**F.** Collaboration of researchers from different universities in enriching and developing knowledge, taking into account diversity and differences.

It is clear from the above that the university community is the leader of the knowledge revolution, as each of their processes is a practice that promotes the larger knowledge society such as: regular or electronic teaching, scientific research and publication, community service practices, student activities, units,

activities and centers of quality, development of the faculty members, and the centers it has established such as: the university research center, innovation and creativity center, arts center, and strategic planning center. All of this is reflected in the quality of the graduate, who represents a conscious mind and mature knowledge that serves the community, and the quality of the faculty member who represents the source of knowledge and develops the culture of society through what he/she offers to serve the surrounding community, as well as the production and innovation of knowledge through scientific research, and its dissemination and marketing to the community as well.

## **2. Relationship of world rankings to the knowledge society.**

The concept of competitiveness among universities has been associated with the emergence of local rankings and competition has intensified with the emergence of global university rankings. Competitiveness among universities depends on the ability of the institution to use the possibilities of knowledge and skills to achieve the desired progress, as competition among universities is an integral part of the competitiveness of the state, and it is based on the best use of the university's research capabilities, the production of knowledge, which contributes to the development of society, and the preparation of human resources at a high level distinct from other universities. <sup>(54)</sup>.

The world-class university is: a university in the first class among the prestigious and internationally prominent academic institutions. All of world-class universities represent research universities without exception, however world-class research universities are not necessarily distinguished. World rankings are considered as a judgment on the status of world universities <sup>(55)</sup>. World rankings encourage universities to divide educational and research activities by intensifying the focus of research efforts and resources in areas of knowledge that are likely to generate a competitive advantage, as global

competition requires being armed with innovation policy, and investment in Higher education and research. <sup>(56)</sup>

Knowledge and the ability to generate, use and disseminate it "knowledge cycle" are among the most important sources of sustainable competitiveness for the University. It is clear that the fundamental relationship between knowledge and competitive advantage in the possibility of generating knowledge leads to creativity, which in turn provides the foundations of the advantage competitiveness <sup>(57)</sup>. When technology is added to the knowledge cycle, the knowledge cycle increases to include patents, and the functionalization and transfer of knowledge to acquire new products and services that contribute to progress and development. When society is able to produce and generate new knowledge, disseminate it in global publishing vessels, and obtain a wealth of patents, it transforms into a "knowledge society <sup>(58)</sup>.

The knowledge society is linked to competition between universities. In the knowledge society, competition in global markets among companies has shifted to higher education institutions, in order to achieve creativity, innovation and development for obtaining the highest materialistic returns that contributes to the transformation of the nature of competition among higher education institutions. This is reflected in and leads to the rethinking of their philosophy and educational strategy and participating in the global competition among universities. Because university education feeds society with all the human resources needed to carry out the requirements of development in the areas of life. University education plays a role in providing specialized scientific and technical vision on various issues related to all areas of national work. In addition, it is responsible for preparing specialized competencies in various branches of knowledge, spreading the scientific and methodological

culture correctly, and developing sound scientific thinking, participating in the political, economic and social development of society, and producing renewable knowledge on an ongoing basis through scientific research. <sup>(59)</sup>

The relationship between the world rankings of universities and the knowledge society is clear for several reasons. The ranking criteria are very closely related to the factors of knowledge society, and the rankings evaluate the institution/university on the basis of the quality of faculty members and their academic and scientific excellence, their proportion to students, the number of graduate students with a master's and doctoral degrees, and the skills of the graduate in the labor market. However, some rankings rank in light of research productivity and publishing in journals with a world reputation and high impact factor. Still, others evaluate the universities websites and their scientific content. Most of the ranking criteria are based on the knowledge aspect, and they revolve around the three axes: human resources, scientific research and information technology. Thus, the current research sought to improve the above-mentioned axes in light of the knowledge society, to improve the ranking of universities in the world's top rankings.

### **Third axis: Improving universities rankings in world rankings in light of the knowledge society.**

The knowledge society is based on spreading information and communication technology everywhere, supporting innovation in universities, honoring innovators and making it as a community culture, providing the right environment for acquiring, publishing and producing knowledge, and focusing on investing in human capital and considering it as a source of wealth in the future <sup>(60)</sup>. The creation of a knowledge society can be inferred by: qualitative measurement of the use and accessibility of modern ICT, the number of scientists in a country, the amount of money spent on research and development

as a percentage of gross domestic product, the ability to produce and export technology, and the number of patents in a country. <sup>(61)</sup>

Based on the above, it is clear that there are axes on which the knowledge society is based, namely the axes of scientific research, human resources and information technology, which will be explained later in detail. It is also clear that there is an integration between the aforementioned axes, as good research requires human resources using modern technology. If there is integration between the three axes mentioned above, the relationship between the three axes can be represented by the following example: human resources represent a hunter of knowledge, technology represents the hunter's hook with which knowledge is hunted, and scientific research represents the taste of the hook. The following figure illustrates this relationship.

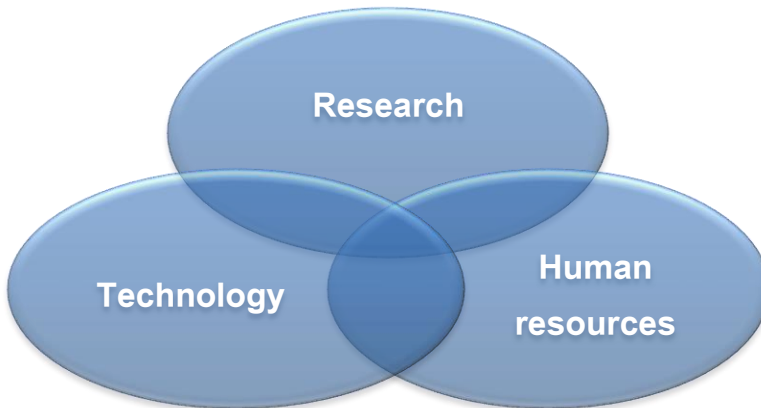


Figure (1) Integration of the axes of the knowledge society

Within the knowledge society, the University has the capacity to generate knowledge through teaching, research, training, workshops, continuing education, seminars, conferences and cultural exchange, as it deals with sources and patterns of knowledge to build a knowledge society which freely possesses and share knowledge and functionalize it in daily life to improve society <sup>(62)</sup>.



The three axes of human resources, scientific research and technology can be improved in the context of the knowledge society:

### **1. Human resources**

Since the knowledge society is largely and mainly based on human resources, and their ability to use the available information technology correctly, organizations can gradually become knowledge organizations by preparing and developing their information, and educating faculty and researchers in the field of scientific research and facilitating the communication processes with them, helping graduates to perform new job roles by developing skills to carry out continuous improvement in practical areas, developing a sense of belonging to the profession through professional development programs<sup>(63)</sup>, and preparing human resources in the following three areas<sup>(64)</sup>:

**A. Education:** by forming basic and general knowledge and skills that enable the individual to live in society and developing specialized work abilities.

**B. Qualification:** through professional preparation by experts, and the formation of specific cadres with specialized knowledge and skills, who are able to adapt to changing work requirements. This preparation includes the basic preparation of the profession, career adjustment, rehabilitation and rehabilitation.

**C. Development:** More education (lifelong) is intended to be geared towards acquiring a broad range of skills and knowledge, rather than necessary to perform the current work, recognizing and managing complex problems, shaping the character and develop it towards the profession, and shaping the individual's practical potential.

## 2. Scientific research:

In light of the knowledge society, scientific research can be linked to the strategic objectives of the university and development plans in the surrounding areas of the university, the provision of a distinct research structure that helps to develop innovation skills and creativity and contribute to solve the problems faced by the government and private sector, the coordination of efforts among researchers Within the University, encouraging interdisciplinary research that will create a creative and innovative environment that helps to excel and publish research in specialized scientific journals locally and internationally, encouraging researchers to publish research in the best international journals through scientific awards, and developing a research plan and identifying the mechanisms for its activation, and the methods of presenting it to the supporters, taking advantage of the expertise of leading universities.<sup>(65)</sup>

Furthermore, scientific research at the university can also be developed in the context of a knowledge society by increasing the original and specialized research production of faculty members and researchers, increasing the culture of scientific research, directing scientific research to serve the community, coordination among universities in scientific research, and supporting, nurturing and encouraging the national human capabilities for creativity and innovation in scientific research, the development of arbitration systems for the performance of scientific research, and the availability of educational and scientific information<sup>(66)</sup>. Scientific research in the knowledge society depends on several aspects, including the following<sup>(67)</sup>:

**A.** Research methods that go beyond passive learning to develop scientific research programs in building an active and effective environment.

**B.** A relationship developed through mutual knowledge networks based on the principles of mutual intellectual convergence among universities on scientific research, as the knowledge society adopts lifelong education.

**C.** Gaining knowledge in universities, learning how to learn and gaining the ability to analyze, do research into future sciences, and adopt the future approach in the scientific research programs.

**D.** Developing programs, competencies and talents of researchers in team work, as a step to try to apply scientific research in a practical way.

### **3. Information Technology:**

The relationship between the knowledge society and the information and communication technology lies in the fact that knowledge has become the main focus of the destiny of nations. It is worth explaining that the information and communication technology is a powerful tool of economic growth, innovation and knowledge-based creativity among members of society. Thus, countries have stimulated all sectors and categories of society to keep pace with modern technologies, and adopt them through strategic plans, because they are convinced of the importance of this area in the superiority and progress of nations<sup>(68)</sup>. In the context of the knowledge society, it is possible to develop the processes of e-learning and distance learning at the university by building the digital content of the courses, converting them to electronic and interactive courses, training human resources at the university to take advantage of the possibilities and modern electronic equipment, and coordinating with E-learning and distance learning stakeholders at and outside university to share experiences and consolidate efforts, and manage the infrastructure of software and technical equipment that support the university's transformation into a

digital university by supporting distance learning programs and providing a virtual environment suitable for students to communicate with faculty members with ease <sup>(69)</sup>.

Information technologies that support the knowledge society are classified into:

- "knowledge storage" techniques, which are used to capture and store knowledge, to improve the organizational memory and to provide extensive access to knowledge resources, such as knowledge repositories and databases.
- "access to knowledge" techniques that aim to enhance access to knowledge stored in knowledge storage tools, and support the transfer of knowledge between individuals, such as knowledge maps and web pages.
- "search and knowledge retrieval" techniques that locate knowledge on internal and external networks on the Internet; to enhance access to knowledge by escalating the speed and accuracy of knowledge search, such as: internet search engines.
- "Knowledge delivery/sharing" techniques that can be adopted in the process of knowledge transfer and dissemination, such as: e-mail systems, voice mail, instant messaging systems, electronic bulletin board, video conferencing, online forums, social networking sites.
- "knowledge discovery" techniques, which can be used in the process of creating knowledge, by examining and analyzing raw data, to discover relationships between different knowledge and extract new knowledge. For example: data mining tools and statistical tools, presentations tools, and animation tools.
- "knowledge use" techniques used to disseminate the application of knowledge; and to disseminate knowledge within work, with the aim of

facilitating the integration and application of knowledge, such as workflow and decision support systems.

- “data management platform” techniques used to provide a web-based platform for collecting, analyzing and communicating knowledge around the world, and creating a point of access to multiple sources of knowledge, such as the Internet, internal and external networks, and portals <sup>(70)</sup>.

From the above-mentioned, it can be concluded that the research dealt with the three axes. **First:** human resources because they are the holders of knowledge and the ones who generate, disseminate, invest and apply it to take advantage of it. They are also the heart of the university that manages it as a whole. If the provision of knowledge which they need has stopped, the university would be weakened or its work would die. On the contrary, if they acquired new knowledge or created something new, the university would be more active, dynamic and empowered to play its major role in society. **Second:** scientific research, which is a basic function of the university and one of the resources that help to generate and create new knowledge, as it addresses problems that serve the community and the surrounding environment, with the possibility of easily spreading and sharing it electronically through the third axis, which is information technology. Until recently, there was a famous saying among academia, namely (Publish or Perish). That is, if the university does not seek to carry out scientific research, scientific publishing and marketing its research, it becomes a dilapidated building that needs to be removed or restored. Technology can also be used to develop the electronic portals of universities, in line with international standards.

### **Suggestions for further research**

1. The role of quality achievement in improving the ranking of Egyptian universities in the world rankings.
2. Improving the ranking of Egyptian universities in the light of the experiences of elite universities.
3. A proposed model for a local ranking of Egyptian universities.
4. Scenarios to foreseeing the future of Egyptian universities in the world rankings.
5. The role of research centers in improving the ranking of Egyptian universities in the world rankings.
6. Obstacles that hinders Egyptian universities' existence in international rankings.
7. Using Information Technology to improve the ranking of universities in the Webometrics ranking.

## References

- Al-Beblawi, Hassan Hussein; Hussein, Salama Abdul Azim (2007): Knowledge Management in Education, Alexandria, Al Wafa Publishing House.
- Dhawi, Bayoumi Mohammed, Al-Maliji, Rida Ibrahim (2010): Directives of the Effective Educational Department, Cairo, Arab Thought House.
- Najm, Abboud Najm (2016): The Management of The Intangibles: The Management of the Immeasurable, Amman, Al-Yazouri Scientific Publishing and Distribution House.
- Hassan, Sana Mohammed (2013): A proposal to develop the teaching performance of Arabic Language Major female teachers at Majmaah University in the context of the requirements of the knowledge society, the Journal of the Faculty of Education, Mansoura University, (84), July, 477-537.
- Al-Juhani, Hanan Attia (2016): The role of Saudi university endowments in supporting the building of a knowledge society from the point of view of Waqf leaders, Journal of Educational and Psychological Sciences, University of Bahrain, 17(4), 114-150.
- Al-Shammari, Mohammed Bin Fahad (2015): The degree to which knowledge production requirements are available as an approach for building competitive advantage at The University of Hail from the

<http://dx.doi.org/10.29009/ijres.3.2.7>

point of view of its academic leadership: Field Study, Journal of the Union of Arab Universities for Research in Higher Education, 35(2), December, 45-66.

- Bulu, M & Olacy, G. A. (2017). Is measuring the knowledge creation of universities possible?: A review of university rankings. Technological Forecasting & Social Change, 123, 153-160. Retrieved from: (www. ScienceDirect.com) (25/3/2018).
- Al-Hout, Mohammed Sabri, Mohammed, Salah al-Din, Ibrahim, Ahmed Abed (2015): University Competitiveness, Journal of Educational Knowledge, Egyptian Association for The Origins of Education in Benha, Egypt, 3(5), January, 127-157.
- Sayed, Samah Mohammed (2018): World Rankings of Universities: Theoretical and Applied Models, Cairo, Al Arabi Publishing and Distribution House.
- Thami, Jomaa Said; Ahmed, Siham Yassin (2012): An evaluative study of the reality of the ranking of Egyptian universities in the light of the criteria of the world ranking of universities, Journal of the Future of Arab Education, Egypt, 19(81), October, 165-284.
- Sedki, Kariman Baknam (2015): World Rankings of Universities: Selected Models of International, Arab and Egyptian Universities, Journal of Libraries, Information and Documentation in the Arab World, Arab League, Egypt, (3), December 32-55.



- Ismail, Ali Abed Rabbo (2015): An analytical study of the criteria of world university rankings and the possibility of meeting them at Mansoura University, Journal of the Faculty of Education, Tanta University, (60), October, 204-258.
- The Arab Republic of Egypt, Ministry of Higher Education (2015-2030): The Government's Strategy for The Development of Higher Education in Egypt: Egypt will continue in the future, strategic planning and policy support unit.
- Al-Saghir, Ahmed Abdullah (2016): The quality of the content of academic websites is an approach to improve the global ranking of Egyptian universities, the Journal of Benha Faculty of Education, (105), C1, January, 183-252
- (Editorial Board) 2007: Recommendations of the 5th International Conference on University Education in the Knowledge Society: Opportunities and Challenges, July 11-12, Journal of Educational Sciences, Cairo University, July, Special Issue, p. 53.
- Stol, I. & Hende, D. D.& . Horn, A. S. (2010). Ranking of rankings: benchmarking twenty-five higher education ranking systems in Europe. High Edu, 60(5), 507-528. Retrieved from: (www.jstor.org) (26/3/2018).
- Diab, Abdul Basit Mohammed (2010): Developing the competitiveness of Egyptian universities in light of the experiences of universities in some developed countries, 18th Annual Scientific Conference: Contemporary Trends in The Development of Education in the Arab World, February 6-7, Egyptian Comparative Education Society The

Educational Department in cooperation with the Faculty of Education, Beni Suef University, 3, 1265-1403.

- UNDP, Regional Office for Arab States (2003): Arab Human Development Report: Towards the Establishment of a Knowledge Society, Hashemite Kingdom of Jordan, Amman, National Press.
- Mahmoud, Mohammed Naif (2014): Knowledge Economy, Amman, Al-Manhal Publishing and Distribution House.
- Van Dalling, Diobold (1997): Curriculum in Education and Psychology, Cairo, Anglo-Egyptian Library.
- Mohammed, Samah Mohammed (2016): Educational requirements to raise the ranking of Egyptian universities in world rankings: field study, unpublished master's thesis, Faculty of Education, Mansoura University.
- Tuhami, Jomaa Said; Siham Yassin Ahmed (2012): Op, cit.
- Fung, J. L.M. (2017). Factors Impacting faculty Research Productivity At A Highly Ranked University. Doctoral thesis. United States. Retrieved from: (www. ProQuest.com) (20/10/2017).
- Tiwari, G & Yeravdeka, V. R (2014) Global Ranking of Higher Education Institutions and Indians Effective Non – Presence: Why Have World – Class Universities Eluded the Indian higher education System ? And How Worthwhile is the Indian Governments Captivation to Launch World Class Universities?, International Relations Conference on

India and Development Partnerships in Asia and Africa: Towards a new Paradigm . IRC . from 13<sup>th</sup> to 14<sup>th</sup> December. Retrieved from: ([www.sciencedirect.com](http://www.sciencedirect.com)) (17/11/2017).

- Mahmoud, Doaa Hamdi (2016): The role of emerging universities in establishing the knowledge society from the point of view of faculty members: Al-Majmaah University Model, Journal of Educational and Social Studies, Helwan University, 22(2), April, 303-354.
- Al-Yahya, Nadia Bint Abdul Aziz (2016): The role of higher education institutions in the transformation into a knowledge society: from the point of view of faculty members at Saudi universities, The Jordanian Journal of Libraries and Information, Jordan Library and Information Society, Jordan, 51(2), 11-63.
- Chen, I.Y.L. et al (2009). Examining the Factors Influencing Participants Knowledge Sharing Behavior in Virtual Learning Communities. Educational Technology & Society, 12(1), 134-148.
- Hoffman, D & Valimaa, J. (2008). Knowledge society discourse and higher education. High Educ. Springer Science - Business Media B.V. 265–285. ([www. Springer. Com](http://www.Springer.Com)) (20/11/2017).
- Ben Tefat, Abdul Haq, Attia, Al Arabi, Ben Amara, Nawal (2014): Ranking of Arab university institutions focusing on ARWU report 2013, 4th Arab International Conference to Ensure The Quality of Higher Education, Zarqa University, Jordan, April 1-3, 803—806.
- Hadi, Riad Aziz (2010): Universities (Establishment and Development, Academic Freedom - Independence), University Culture Series,

University of Baghdad, Center for Development and Continuing Education, 2(2), 1-82.

- Saisana, M. et al. (2011). Rickety numbers: Volatility of university rankings and policy implications. *Research Policy*, 40, 165–177. Retrieved from: (www.elsevier.com) (25/3/2018).
- Al-Zahrani, Ibrahim bin Hinsh, Al-Sisi, Jamal Ahmed (2017): Reengineering operations at Arab universities to improve their competitiveness in the light of world rankings, *Culture and Development Journal*, Egypt, (116), S17, May, 1-68.
- Jeweler, Abdul Rahman bin Ahmed (2011): International University Rankings: Saudi University Experience, *Saudi Higher Education Review*, Research and Studies Center, Ministry of Higher Education, Saudi Arabia, Riyadh, (5), Rajab, 25-38.
- Mohammed, Haji Sharif, Bakht, Samer Ibrahim (2015): The importance of performance indicators in the ranking of universities at the global level - an analytical study of the trends of the rectors of Sudanese public universities, the Conference on Performance Measurement and the application of key indicators and their role in enhancing overall quality in universities in the Arab world: Experiences - Challenges - Future Strategies, March 2-4, Riyadh, Arab University Union, 1,17-68.
- Abdel Moneim, Fatten Mohammed; Rajab, Mustafa Mohammed (2016): The relationship between academic information justice and the academic world ranking of universities: exploratory study, *Journal of Culture and Development*, Egypt, (100), X16, January, 9-70.

- Al-Saeed, Rida Massad (2006): The modern world ranking of international universities and the websites of Arab universities has fundamental questions, 13th Annual National Conference (Arab 5th: Arab Universities in the 21st Century: Reality and Visions, November 26-27, Center for The Development of Education) University, Ain Shams University, C1, 76-105.
- Hanafi, Khaled Salah (2014): Mechanisms to improve the conditions of Egyptian universities in the world rankings as an approach for the development of Egyptian university education, 18th Annual National Conference (Arab X): Developing the performance system in Arab universities in light of contemporary global changes, in the period from August 10-11, University Education Development Center, Ain Shams University, (26), 265-322.
- Ibrahim, Asma al-Hadi (2014): Factors of low ranking of Arab universities in the world rankings of universities and the ways to upgrade them, the 18th Annual National Conference on the Development of the Performance System in Arab Universities in light of contemporary global changes, Center for the Development of University Education at Ain University Shams, Cairo, (26), August, 87-126.
- Mohammed, Osama Ahmed (2017): The Unified Matrix of world Rankings of Saudi Universities on Competitiveness in Global indicators, Conference on the Role of Saudi Universities in Activating

Vision 2030, January 11-12, Qassim University, Saudi Arabia, 503-536 .

- Morsi, Mohamed Youssef and Others (2014): Proposed mechanisms to improve the ranks of Saudi universities in world university rankings, Journal of the Faculty of Education, Al-Azhar University, (161), c3, December, 61-106.
- Ali, Mohammed Qassem (2014) Academic Accreditation and The Absence of Arab Universities from the World Rankings, Journal of Reading and Knowledge, Egypt, (153), July, 105-127.
- Al-Mutwali, Sarah Abdel Mawla; Hawila, Suhair Mohammed (2014): Global University Rankings Criteria: Critical Analytical Study, Journal of Educational Sciences, Institute of Educational Studies, Cairo University, 22(4), C2, October, 649-666.
- Qasimi, Shawky, Soleimani, Sabah (2016): World Rankings of Universities: Reading in Conceptual Contexts, Journal of Human Sciences and Society, Faculty of Humanities and Social Sciences, University of Biskra, Algeria, (19), June 77-102.
- Ibrahim, Mohammed Abdel Razeq (2013): World rankings of universities and the website of Arab universities including: Critical Vision, Journal of Arab Studies in Education and Psychology, Association of Arab Educators, (41) C3, September, 87-134.

- Ismail, Talat Hosseini (2017): Mobilizing additional financial resources to meet the requirements of the world rankings of universities, *Journal of Educational and Psychological Studies*, Faculty of Education in Zagazig, (95), April, 5-120.
- Ibrahim, Mohammed Abdel Razek (2013): Op, cit.
- Al-Sharbini, Ghada Hamza (2016): Foreseeing the future of Arab universities in the context of world rankings, 6th Arab International Conference to Ensure the Quality of Higher Education, April 9-11, Sudan University of Science and Technology, Sudan Republic, 39-100.
- Al-Zahrani, Ibrahim bin Hinch, Al-Sisi, Jamal Ahmed (2018): Developing the performance of the heads of academic departments at Qassim University in light of the requirements of the knowledge society, *The Journal of the Faculty of Education, University of Assiut*, 34(7), July, 261-343.
- Jidori, Saber Awad, Jidori, Bashar Awad (2016): The university's role in achieving the elements of the knowledge society from the point of view of the faculty members at Damascus University, *Educational Journal, Kuwait*, 30(118), March, 141-186.
- Adam, Hala Qassem, Ahmed, Suad Mohammed (2012): The Role of Universities in Supporting the Knowledge Society: The Case Study of the Open University of Sudan, 23rd Conference: Government, Society and Integration in The Building of Arab Knowledge

Societies, November 18-20, Doha, Qatar, Arab Library Federation Information, C3, 1609-1660.

- Abdul Tawab, Abdul Tawab Abdullah and Others (2015): University and its Developmental Role in the Knowledge Society, Journal of the Faculty of Education, University of Assiut, 31(2), February, 394-450.
- Wiseman, A. W. (2014). Strategically planning the shift to a Gulf knowledge society: The role of big data and mass education. Education for a Knowledge Society in Arabian Gulf Countries. International Perspectives on Education and Society, 24, 277-304. Retrieved from: (www.emeraldinsight.com) (21/1/2018).
- Dhawi, Bayoumi Mohammed, Al-Meligi, Rida Ibrahim (2010): Op, cit.
- Al-Hout, Mohamed Sabri; Mohamed, Saladin; Ibrahim, Ahmed Abed (2015, Ibid.):
- OBA, J. (2008). Creating World-Class Universities in Japan: policy and initiatives. Policy Futures in Education, 6(5), 629-640. Retrieved from: (www.wwwords.co.uk) (29/6/2018)
- Marginson, S. (2009). Open Source Knowledge And University Rankings. SAGE Publications and Thesis Eleven, (96), 9-39.
- Buran, Someya Amer (2016): Knowledge management as an approach for competitive advantage in contemporary organizations, Amman, Academic Book Center.
- Falah, Amal Mohammed (2017): The role of Jordanian public universities in building a knowledge society from the point of view



of students in light of some variables, *The Journal of The Faculty of Education, Al-Azhar University*, (173), 1, April, 564-537.

- Mohammed, Ali Abdul Karim, Zubeidi, Abdo Ali (2014): Strategic planning in Saudi universities and its role in improving job performance as viewed by academic and administrative leaders, the Union of Arab Universities, General Secretariat of the Union of Arab Universities, 3(1), 1-18.
- Mr. Amani El Sayed (2015): Proposed visions of intellectual capital management in higher education institutions in light of the requirements of the knowledge society, *Journal of Educational and Social Studies*, 21(4), October, 603-646.
- Lor, P. J.& Britz, J. J.(2007). Is a knowledge society possible without freedom of access to information? *Journal of Information Science*, 33(4), 387–397.
- Abdul Hay, Ramzi Ahmed (2011): *Knowledge Society and Arab Community Building*, Al-Warraq Publishing and Distribution Foundation, Amman .
- Doaa Hamdi Mahmoud (2016): Op, cit.
- Antosova, M. & Csikosova, A. (2012). Whole life education in context of knowledge society. *Procedia -Social and Behavioral Sciences*, 46. 2842- 2845. ([www.sciencedirect.com](http://www.sciencedirect.com)).
- Doaa Hamdi Mahmoud (2016): Op, cit.
- Hassan, Hussam al-Din (2013): A proposed vision to develop the quality of scientific research programs in Palestinian universities in light of

<http://dx.doi.org/10.29009/ijres.3.2.7>

the elements of the knowledge society and modern contemporary trends "A Future Vision on Quality of Performance and Academic Policies", 3rd Arab International Conference to Ensure the Quality of Higher Education, in April 2-4, Jordan Zitouna University, Jordan, 361-371.

- Ahmed, Naima Mohammed (2016): Ensuring the quality of higher education within the knowledge society, 6th Arab International Conference to Ensure the Quality of Higher Education, November 9-11, Sudan University of Science and Technology, 630-639.
- Arando, Sisi (2017): The effectiveness of ICT in sub-Saharan Africa's transformation into a knowledge society: challenges and future prospects, African readings, Saudi Arabia, (32), June, 62-73.
- Doaa Hamdi Mahmoud (2016): Op, cit.
- Safar, A. H& Alkhezzi, F. A.(2014). Pkm Tools For Academia: Ingredients For Success in The Global Knowledge Society. TOJET: The Turkish Online Journal of Educational Technology. 13( 3). July. 123-137