An Exploratory Study Of Coining Of Informational Term In Arabic Language: Qualitative Approach

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Abstract

The aim of this research is to investigate the means and methods that contributed to the coining of the informational term related to data, information, and knowledge. The qualitative approach based on printed sources and extensive reading of non-printed sources and documents, as well as audio-visual materials such as recorded seminars, has been adopted in this research. The outcomes of the research have proved that there is a short come in the coining of the informational terms in the Arabic language, and resort to translation or Arabicization or transliteration because of the hegemony of foreign languages that was more obvious among Arab specialists. Moreover, the outcomes of the research have shown the existence of various problems and obstacles encountered in the coining and usage of the informational term. Hence, more studies on this issue are widely required.

Keywords: Arabic language, coining of informational term, computerization of informational term, information science, informational term.

1. Introduction

Continuous development in information technology and information science globally has led to an increase in the role of information in all aspects of our lives. These developments have led to the production of new terms associated with new technology and its application in information science. Information society globally is based on information and dealing with new technologies, which by default involve using new information terms. The term is a tool for dealing with knowledge and communication in the information society. The Merriam-Webster dictionary defined the term as "a word or expression that has a precise meaning in some uses or is peculiar to a science, art, profession, or subject (Merriam-Webster 2019).

The literature of technology, knowledge, and information science in the Arabic language are mostly translated from English. This resulted in the rarely documented phrase "Arabicization," which refers to "the variant of English employed by professional Arabs with a good command of English." Such a variety manifests syntactic features that relate to the main structural constraints found in the Arabic language and culture (Alshurafa N 2009). The researchers found that Arab scholars heavily depend on Arabicization, particularly in information science, which leads to short come in coining of information terms in the Arabic language, and resort to transliteration or Arabicization, which drove the researchers to start this research project.

2. Problem Statement:

The research problem is to identify and investigate concerns about the coining of information concepts in the Arabic language, as well as the obstacles linked to their development. There has been little research in information science on the creation of information terms in the Arabic language, and no previous study has gone into as much detail. As a result, the research challenge is divided into the following questions:

First Question: What are the methods of coining information terms in the Arabic language?

Second Question: What are the problems of coining information terms?

3. Research Methodology

The researchers have found that a qualitative research paradigm would be most suited to the study topics. The research questions were answered through a rigorous examination of the

associated literature published in Arabic and English language in accordance with the nature, objectives, and questions of the research, using content analysis methodologies. Printed and non-printed texts and sources, such as taped seminars, are included in the literature. The researchers selected to review the literature produced in the previous fifty years because the research works with information words and their relationship to information technology.

4. Research Importance:

The importance of the study stems from its goal of identifying the tools, methods, and strategies that can be used to coin information concepts in Arabic at a time when people rely largely on technologies that supply knowledge, data, and information. The advantages are not restricted to one field of knowledge, but include and feed all disciplines of knowledge for the sake of change at times and development at other times. As a result, this research helps to theoretically and practically develop the inputs, contents, and outputs of terminological processes.

The importance of the informational term will not emerge unless researchers and scholars are encouraged to deepen this field and explore its sights to keep pace with the spirit of the age of information technology in which knowledge, data, information, and science are accelerating.

Researchers believe that any knowledge or information is considered useless unless it is governed by a term as appropriate as technology or machine that brings information or knowledge into existence theoretically and practically, in terms of modernity and the imperative need to invest in any informational term whatsoever.

The magnitude and breadth of subject matter made the researchers confused about the sources that could be invested in to achieve the objectives of this research. The researchers found that, despite their large numbers, most of the research comes from the linguistics field rather than the information science and information management fields. Going through the literature of information science, the researchers found that there is a lack of research in this area. The few published researches do not contribute significantly to facilitating the research problem, considering that they are merely individual or institutional efforts that are not complete in themselves and their topics. Perhaps the results of this research call for more

efforts by researchers, scholars, and thinkers to be spared in this framework over the long-term.

5. Discussion

5.1 Means and Methods of Coining Information Terms

Attention to the production of information terms with the right means and methods began in the sixth decade of the twentieth century. Scientific, social, economic, cultural, and military institutions have also begun to identify the foundations and strategies for developing informational terms from basic sciences to applied and experimental science. El-Anaswa (2018) and Brillouin (1962) state that science begins when the meaning of the word is strictly delimited. Words may be selected from the existing vocabulary, or new words may be coined. Almost fifty years ago, Wellisch (1972) discussed the term information at that time and the difficulty of considering information science as a discipline. However, searching in Arabic literature, there were no studies discussing information terms or the coining of information terms from an information science point of view. Studies found in the literature are merely studies from the linguistic field.

Scholars in the Arab world have come up with several techniques used to find and develop scientific terms, including the use of a scientific suffix that they called "**Al Ya' Al Sena'yeh" "**الياء الصناعية**"**. And the use of some language structures, such as "فعللة**"** structure (e.g., تلفزة television). And modern standard Arabic is used in contemporary Arabic such as, the structure "فاعول" (e.g., صاروخ andناسوخ) i.e. (fax) and (computer)." (Murtadat AM. 1999; El-Anaswa M. 2018).

Specialists have also used a variety of means and methods to generate the informational term in light of several factors that have been adopted later in the monitoring and selection of new terms, which are factors used and practiced by specialists in the field in which the term is developed, such as the use of the term in the terminology lists available for the respective field; the views of the specialists This aspect is concerned with the phrases that will be used by the general audience, in particular (Mariati M. 2004).

The modern technological inventions have helped to achieve this, foremost among them the computer, as computers provide terminologists with various generative potentials in language. Since terminological work is based on generating new nomenclature to signify new concepts, terminological

computerization is essential to assist terminologists in easily finding specified linguistic significance-or specified lexical units-that fill blank entries in the language of science they examine (El-Anaswa 2018). For the specialized lexical application, it is more closely related to the synthetic application in language; therefore, the role of the computer in it is clearer. The computer has many areas of use, and most importantly, the terminological synthesis, which leads to forming specialized scientific dictionaries whose collection and development are also based on the computer (Ibn Murad I 1996).

Specialists were able to compose specialized dictionaries in various fields of knowledge, some of them stated that these dictionaries have gone through stages as well as through what was called generations of dictionaries. The first generation of them was followed by the second. The subject of our interest in this research was the two generations in which modern technology has actively contributed to their emergence; namely, the third and fourth generations. The third generation is called regenerative dictionaries, as "the beginning of the fourteenth century Hijri and Twentieth-century AD was considered a significant period of time in the Arab world on several levels, including going through the experience of the regenerating linguistic dictionaries: This was a result of cultural and scientific imperatives which called for the need to conduct a practical way of the formation of dictionaries to keep pace with the linguistic and scientific development and meet the Arab researchers' need for modern expressions, scientific terms, and precise definitions.

Some researchers see some deficiencies in these dictionaries, despite the fact that they were able to "break the (temporal and spatial) restrictions imposed on language in the age of protest, and allow the consideration of generated, updated, Arabized and extraneous words in order to meet the scientific needs of researchers and students. It also made sure to invest the educational approach in terms of selecting the functional vocabulary’s balance. In addition to the use of illustrative examples in defining approaches (contexts, images, and illustrations) providing that they do not exceed the standards of the Arabic language in order to maintain its purity and development (Al-Jilali 1999).

This entailed investing in the computerization of language through computerizing texts in order to make it easier for scientists and specialists to present this generation of dictionaries despite the difficulties they faced. No matter how

knowledgeable a researcher is and how extensive his knowledge is of ancient and modern writers, he can not alone, in his field of competence, encompass it all.

Computerization in the process of terminological code, therefore, has a crucial role to play. The scientific heritage requires being collected into a comprehensive heritage code supervised by specialized scientists and terminologists, which is processed with the use of computers that are capable of reproducing and processing lengthy texts at the same time. If the texts are extrapolated and their terms are extracted and stored in the terminology banks, a terminological thesaurus can be established, which can be readily used as a reference when developing modern terms or compiling specialized dictionaries (Ibn Murad I.1996).

Hence, some researchers who are interested in linguistic heritage have found a way to enter the world of technology to enrich their linguistic production. So, they had to look into the coding and its issues, which in turn made them create some of the software, of which the previously mentioned morphological analysis was one. "People in the first few decades of the 21st century may be the last to live with a fundamental part of humanity's linguistic heritage. It may, therefore, seem an urgent objective to use digital tools to document what still exists in addition to what has been lost. It is clear that a global archive in these areas will be a profound and fertile necessity "(Montegree S, L. 2014).

In addition, researchers found that language is capable of generating definite terms for local life and folkloric customs and traditions, such as the creation of thousands of terms for the ancient civilizations that we consider today as primitive, as they are considered technical terminology for all the nomenclature used by ancient Arabs in their daily lives. Language is, in principle and at varying levels of efficiency, able to create the most accurate, complex, and intractable terms in the fields of knowledge (Murtadat AM. 1999).

The so-called functional language then emerged and expanded in the fields of the term coining, and thus, people of different professions find specialized terms with connotations that bear meanings different from the general meanings if there was any. If not, they may create jargon (ie: terms) that does not conform to the general lexical use (Murtadat AM 1999).

This is clearly demonstrated by the Arabic language, since the most developed languages in the world are the ones that are able to find appropriate terms for modern concepts brought by civilization as well as for discoveries in all fields of knowledge (Murtadat AM 1999).

This matter has evolved to a phase in which it depends on dictionaries and the lexical units that have been coded to facilitate the work of software, since linguistic units -in all-natural languages-can be classified according to generalization and specification. The lexical units are general and specific. The general unit is the general lexical item that has a literary function and hence is considered one of the vocabulary constituting a literary text. Among the most important characteristics of the general lexical item which has a literary function are being common, semantic pluralism, suggestive significance, and relevance to the different contexts in which the general lexical item can take place through usage (Ibn Murad 1996).

5.2 Fourth Generation / Contemporary Dictionaries:

This phase had a quick and sudden start because this generation of dictionaries followed a modernist heritage trend; through which it tried to reconcile heritage and modernity. It considered the language as descriptive in the light of modern linguistics theories, taking into account the variances and differences between the Arabic language and foreign languages in terms of rooting, derivation, and syntax. (Al-Jilali H.1999).

Specialists at this stage tried to take advantage of linguistics, especially contrastive linguistics, and invested in the relations between this science and different languages. In this contemporary descriptive trend, a number of dictionaries have emerged, which are represented as the fourth generation in the course of the Arabic dictionaries evolution and which reflect its state today. The most significant are: Al-Munjid fī al-lughah wa-al-aʻlam and Lexicon of the Arabic Language and others. (Al-Jilali H.1999).

One of the characteristics of this phase is that there are many publications that talk about ways of developing Arabic terminology and which agree on the principles, although they differ regarding the degree of importance of each principle.

These principles are concluded in two parts; the first part is "Rooting". This part includes "Derivation", such as deriving a noun from a verb, an adjective from a verb, a noun from an adjective, an adjective from an adverb (such as a computerized

"Hawsaba" from a computer "Hasub"), and a noun from an instrument or an adjective from an instrument (such as sworded "Sawafa" from a sword "Saif" (Ibn Murad I.1996).

Another way of derivation is "Portmanteau", which is the translation of a term into a word generated from two or more Arabic words that are consistent in terms of pronunciation and meaning. Metaphor and Composite Compound Structure are also examples of derivation.

On the other hand, the second part of generating terms is "borrowing". This part includes "Loanword", which is the acceptance of a foreign term with its pronunciation, sounds, and form. An example: cinema. Borrowing also includes "Arabized", which is a foreign term that is borrowed and changed in terms of sounds or forms by addition or substitution to conform to Arabic conventions (Samaha and Mahmoud 1994).

The production and abundance of terms characterize the present era. Therefore, we need to select their appropriate position and control them before translation and use. Arabization and translation into Arabic can contribute to the accuracy of the proper use of terms on the basis of investigations conducted before translation, coordination, and determining connotation. In addition to the preparation of dictionaries to facilitate students, employees, and researchers who are interested in the general public accepting and circulating them in a correct and proper manner. (Muqaddam S 1999).

In an advanced period, interest in linguistic roots began in accordance with linguistic systems that were consistent with the status of the desired term. The systems of root extension, the symmetry of forms, compound agglutination structure, and interpretation have shown that Arabic is able to translate and arabize any foreign word. It is possible to formulate similar terms for the English counterpart. In fact, this will remove all obstacles for Arab students and encourage them to use Arabic in technical writing. (Habibi IA.1996).

This does not mean that the Arabic language was influenced by other languages; rather, it indicates the impact of Arabic on modern languages with regard to making sense and creating new systems. In Arabic, the derivation system is broader than it is in other language systems. Hundreds of derivatives can be obtained from one root by implementing a logical approach. This logical approach demonstrates the ancient Arabs' fondness for mathematics (Habibi IA. 1996).

The process of generating and producing terms in Arabic has accelerated and sometimes slowed down, and the procedures necessary for successful coining of any new term translated from any living foreign language must go through four phases, none of which is dispensable in any way: Phase I is researching the background of the term. While phase II is considering its derivative origins. Phase III is verifying the use of the term morphologically and grammatically. And phase IV is scientists' use of the term in their fields, which makes it a new term. (Murtadat AM 1999).

The specialists in the computerization of languages have done hard and valuable work to create specialized and general terminological dictionaries, including a number of processes, such as programming the language of approved books and literature. This is, therefore, the first computerization process done for specialized dictionaries in a preliminary area, which is terminology. Nonetheless, this process is closely related to another computational process that is necessary for the formation of a specialized dictionary, which is the process of synthesis. This process is related to two important pillars of the specialized applied dictionary: the lexical collection and the lexical arrangement, which are the second and third areas of the application of computerization in specialized dictionaries "(Ibn Murad I. 1996).

All of these processes are taking place under the so-called terminological coining and this is the area of interest of specialized theoretical lexicography, which is not applied. Nevertheless, computation has an important, irreplaceable role in general lexicography. This is because the lexical items that are dealt with in general lexicography (the general words of a language) had existed in the language before lexicographers dealt with them or expressed an interest in them. They belong to a common public lexicon used by a community that acquired it through being passed on from one generation to another in oral and written discourses which were written down in general dictionaries. There is no doubt that this public lexicon is subject to development because one of the most important characteristics of the lexicon in all languages is growth and development, which is different from the remaining language constituents, i.e., phonology, syntax, and morphology. These are based on purely linguistic elements linked by networks of relationships within the language system itself, and therefore, their most important characteristics are stability and slow transformation. As for the lexicon, it consists of vocabulary and

these are non-linguistic (signs) which are used by members of a linguistic community-that is, speakers-to express themselves. (Ibn Murad I. 1996).

Disclosure of the meaning of a word depends on the identification of its derivative origins, revealing the adopted approach to using it in metaphor and translation, tracing it with regard to the fulfillment of its purposes and expression of meanings, and discerning its criteria in various positions of use and composition (Al-Zaabalawi 1995). One of the most prominent phenomena in this domain is Arabization[1] in all its technical and traditional methods, based on the fact that Arabization is intended to translate a foreign word as it is into the Arabic language with some kind of modification or change in its form to the extent that is in line with the phonetic and morphological rules in the Arabic language according to the main restrictions of these two aspects of our language. Arabization is therefore limited to words and syntax in terms of structure and form "(Bishr K. 1995).

Al-Ajrami (2015) argues that Arabicization is a language planning process that aims to make the Arabic language inform in some sense the None-Arabic terms to be more understandable among Arab readers. The rapid growth of Arabization was found to be a result of many factors, such as teaching foreign languages in schools, the belief in the inability of the Arabic language to come up with unique terms, and the dramatic increase in publications in the English language compared to the Arabic publishing growth. This has led to many problems in the Arabic language, despite the fact that the Arabic language is a language that can come with unique terms rooted in Arabic words. One of the problems is transliteration, which refers to using scientific words as pronounced in the English language but using Arabic letters. Transliteration is feared to threaten the Arabic language as it may lead to losing the Arabic culture (Abdelhay A, Eljak N, Mugaddam A, et al. 2016; Awang R and Salman G. 2017). Scholars seek transliteration when they fail to render English terms into their equivalent terms in the Arabic language. Rendering scientific terms is a process that is considered challenging and, in some cases, impossible as there are no similar terms or words in the Arabic language that give the same meaning as the word (Awang R and Salman G. 2017).

[1] Arabization or Arabicization are used interchangeably with the aforementioned term Arabcitation.

Abdo and Awwad (2019) found that Arabization is not effective in many cases. The frequency of the use of the term was found to affect the level of understanding of the technical and scientific terms translated from English to Arabic. As a result, the frequent use of a term makes it more grasped and absorbed by specialists. On the other hand, transliteration was strongly present in the Arabic language. Many scientific and technical terms were rendered from English letters to Arabic letters, such as "Robot" "روبوت", "computer" "كمبيوتر" Bluetooth "البلوتوث". And many more. These examples show that scholars in many fields have resorted to transliteration to avoid searching for Arabic terms that carry the same meaning as English terms.

It is well known that the Arabization of thought in the fields of science, at least, may take a long time due to the many factors and elements and their interdependence. This requires us to consider these factors and elements and choose the easiest and most effective one in this regard. In our view, that factor or element is linguistic Arabization (Bishr K. 1995). It should be borne in mind that "Arabization with its rules and provisions may be difficult to adopt sometimes, therefore we do not mind translating the foreign term in its original form as it is until the concept is settled and clarified unambiguously, and there should not be a problem if the scholar reconsiders it later for translation." (Samaha E and Mahmoud I. 1994).

5.3 Problems of Coining Informational Terms

Throughout all stages of the coining and production process, specialists have noticed two important matters: the level of society's technological culture; and the linguistic level of the users of the informational terms. A number of problems emerged from these two levels that faced the coining and production of terms, such as the problem of translation, Arabization, and interpretation; the problem of education and language academies; the problem of the media and its minor role in recognizing and spreading informational terms; the problem of including informational terms in scientific and cultural terms; and finally, the problem of management and legislation.

Moreover, Samaha and Mahmoud (1994) identified a number of barriers and obstacles to coining information terms. These are time delay in putting the necessary terms, and slowness in achieving the required tasks. In most cases, a term is put and makes some space, where many of the Arab lists are merely a translation and Arabization of foreign lists of terms.

Adherence to some linguistics with non-approval of measurement on the audio tenses and non-approval of formulating new names except legal ones.

Absence of a common known Arab term that attracts the researcher or speaker, whether by using a foreign or a general term, or by abstention from speaking or by non-clarification. Political and administrative reasons and the absence of an executive unified body with authority that supports the movement of putting the terms together and encourages the use thereof and using them as unified. Teaching some theoretical and applied scientific subjects using a foreign language. Social and psychological reasons, and the absence of a historical dictionary that contains Arab language terms. Finally, the scatter and variation of terms and non-unification among each Arab country (Samaha E and Mahmoud I. 1994).

This cognitive shortage that is prevailing in the Arab world nowadays, was not prevailing in the old days, when scholars had high knowledge and were well-educated in their culture (Murtadat AM. 1999), which contributed to deepening this obstacle. Sometimes, it is easy to forget that: The Arabic language has no system to translate technical terms similar to the systems of the European languages (Habibi IA. 1996).

In addition, some researchers consider the reason for this linguistic problem, during our time, mostly attributed to the fact that scientists who work in science (engineering, math, medicine, pharmacy, the media, and different technology fields) might be the same, very complex, but they do not know high Arabic, which allows them to find appropriate Arabic synonyms for the tasks of machines and devices with which they deal with. Since they did not have a chance to form a high structure in good Arabic, and as they were incompetent or incapable of dealing with Arabic with full professionalism, they believed it could not absorb daily technological meanings with which they deal in their labs, research, and the lectures they address or receive. Accordingly, they feel depressed and tired, whereas the truth is that they are incapable (Murtadat AM. 1999). This led to the absence of Arabic symbols in writing in these fields. The absence of the scientific symbol had a huge effect on the derivation process of generating terms. This resulted in looking widely at the tendency for derivation which can be produced by a computer based on post programming. The thing that facilitates achieving it in Arabic-since it is a Semite language-is keeping the measurable phenomenon of derivation within it. The abstract

triple source can be solely heard in derivation (Ibn Murad I. 1996).

In addition to that, linguistic competitions had shown the sufferings of the terms in scholars and thus they were forced to find solutions to this issue. In most cases, the term is followed by some kind of space. A lot of terms are foreign, and therefore, Arab terminology activity is one that responds to scholarly needs that responds to real practical needs. In the absence of using Arabic as an actual use (the teaching language in higher education, research language) and without a competitive language, the need for an external term does not generate it for use but results in looking for some texts in the Arabic language. Consequently, scientific language and technology contain information that was not generated by Arab scholars and scientists, and this case makes terminology unclear (Ibn Sassi M. 1996).

Terminology work was affected by the absence of one body responsible for its production and coining. The entities claiming their responsibility in this field vary. Coordination among individuals and those bodies was absent, which resulted in the absence of coordination, "which is a clear feature of the Arab term nowadays". Relevant to this problem, there is another issue, namely, the individual tendency and personal taste of inputting different terms for other ones agreed upon. This issue is not too far from the regional tendency (Ibn Sassi M. 1996).

Some scientists attempted to find some solutions, but slowness in implementing these solutions resulted in the spread of various synonyms of one foreign term or introducing it into Arabic in its foreign form. When an Arab synonym is approved, it will be too late and the Arab proposed term will be kept in books and dictionaries, not used by people (Ibn Sassi M. 1996). Moreover, terminologists encounter a number of semantic forms that can not be ignored but force the specialist to find appropriate solutions. Among these problems, which are plenty in the specialized scientific dictionary, is the semantic mismatch between foreign terms and their Arabic counterparts. The problem might be more obvious when preparing a multi-language dictionary, where it would be impossible to do semantic matching among the languages of the dictionary. Another important problem is using literary translation prior to making sure of the existence of original Arabic synonyms, which causes multiple translations and terminology synonyms. And the

abundance of synonyms in the specialized Arabic dictionary which denotes one concept (Samaana JH. 1999).

Some specialists were more optimistic than others and considered that such problems or constraints are merely shortcomings. It needs some time and effort to enable the program to achieve its objectives by inputting and generating the terms appropriately. Afterward, there are some shortcomings that can be avoided in the future, such as the existence of vocabulary and semantic gaps in the lexical balance, which were deepened by the evolution of the rapid development the world is witnessing in all scientific, cultural, and informational fields. It has been an issue felt by the Arab reader since the early twentieth century. Another shortcoming could be the lack of reconciliation between heritage and modernity in terms of distinguishing between the general vocabulary balance and career balance, including the neglected, deserted, and semi-deserted, which are related to literary or intellectual heritage texts that are not invested in this era. And finally, leaving the representational and historical aspects of the words and their connotations. In any lexicon dictionary, there is a reference to the parable of the word and the tongue that descended from it (original, extraneous lexical) and the history of their significance in years or ages (Al-Jilali H. 1999).

6. Conclusion and Recommendations

The research concluded with a number of results and recommendations. The researchers found that there are deficiencies in the coining and production of terminology in the Arabic language due to the deficiencies of Arab specialists and because of the shortcomings of the Arabic language itself. Foreign languages, particularly the English language, dominate the production of information terminology because modern technologies are the invention of the people of those foreign languages. Moreover, the researchers found that there are a multiplicity and diversity of problems facing coining and production of information terms in Arabic, which led to resorting to methods and means based on localization, translation, or transfer of languages into Arabic.

The researchers found that the role of Arab administrations and Arab governments was limited in the production of information terminology and in solutions to the problems facing its production, as their institutional or individual role did not exceed the limits of routine management only. However, this could be suggested as a further study. The analysis of the

literature revealed that there is an apparent deficiency in the role of institutes and universities in coining, production and use of information technology in the Arab world, which negatively affects scientific and academic research in institutions that are interested in higher education and scientific research. Researchers conclude that information terms play an essential role in the information society in various cultural, economic, and scientific fields.

6.1 Recommendations

Based on the results of the present study, the researchers consider it necessary to recommend the need for Arab administrations and governments to pay attention to the coining, production, and dissemination of the informational term and activate its role in management and scientific research. The researcher also stresses the necessity of finding work teams whose task is limited to studying Arabic and foreign information terminology and generating and coining information terms. Moreover, researchers recommend the need to allocate adequate budgets to spend on projects for specialized dictionaries of information terms in all areas of modern science and technology. And finally, there is a need to guide researchers and scholars in institutes, colleges, universities, and economic institutions towards an interest in terminology and information technology to look to the future from the past and present, especially in the era of the flow of data, information, and knowledge. This accelerated flow is not easy to reduce or stop.

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