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Translation and Arabization of Computer Terminology: A Study of Learners' Preferences and Attitudes

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Abstract

The study assessed learners' preferences and attitudes towards translated and Arabized computer terminology. It addressed the obstacles of Arabic scientific terminology and how these obstacles affected learners. For its instrumentation, it used two research tools to collect the data. The first tool was a test that rated learners' preferences for translated and Arabized scientific terminology. It provided optional Arabic equivalents for 25 foreign target terms. The other instrument, a questionnaire, consisted of 10 items to which participants responded via a 5-point Likert rating. The two tools were administered to a sample of 159 participants majoring in computer science. The data was analyzed using SPSS (Statistical Package for the Social Sciences). Findings reveal learners' positive attitude towards Arabic computer terminology but translated terms gain more preference than Arabized ones. The study also revealed learners' positive attitude toward Arabized terminology, stressing the significance of Arabization to maintain language identity. It is generally emphasized that the multiplicity of translated forms of the foreign term is inevitable due to the diversity of translation techniques and methods.

Keywords: Arabization, Attitude, Preference, Translation

Introduction

The bare fact about the Arabic language's survival is that the Qur'an is scripted and recited in the Arabic language. Moreover, Islamic worship and practices are performed in the Arabic language. This practical need brings with it the great significance of the Arabic language. Apart from the aforementioned extra-linguistic factor, the linguistic system of the Arabic language provides a potential for its survival. Throughout its history, the Arabic language has proved to have a peculiar and sophisticated linguistic system that survived over more than 15 centuries. This sophisticated linguistic system is based on complicated but standardized morphological, syntactic and lexical rules. One primary source for this potentiality of the survival of the Arabic language is the mechanism that allows its lexical development. This mechanism involves a variety of word-formation processes.

The major word-formation processes in the Arabic language are derivation and Arabicization. The former follows internal morphological regularities to form new words, whereas the latter is more comprehensive and even involves the former within its scope. Arabicization provides greater potentialities for word-formation since it is open to the meaning of assigned words from other languages than derivation, which allows only the

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meaning developed from the bare morphological root of an Arabic word. In addition to these two methods, there are also other processes like transliteration, calque, gloss translation and communication translation (Almaghribi, 2015; Awang & Salman, 2017).

Transliteration is used to achieve phonetic equivalents in a targeted language for a given source language word. Transliteration in different writing systems results in different representations for a given source language entity name (Guellil, Azouaou, Benali, Hachani, & Mendoza, 2020). In linguistics, calque or loan translation is defined as a word-to-word translation from one language to another. For instance, if a phrase is taken in French and then it is translated root-for-root into English, this is called calque. In order words, calque means to borrow a word or phrase from other language while translating its components to create a new lexeme in the targeted language. It contributes to the richness of a target language by avoiding direct use of foreign words. It is a construction, unlike a loan which is a phonetic and morphologic adaptation (Avezimbetova & Kalyanova, 2022). Glossing is a way for increasing incidental vocabulary learning. They are often supplied for unfamiliar words which may help to limit continual dictionary consultation that may block and interrupt L2 reading comprehension process. Moreover, it can be used as one of the ways of input modification. Communication translation is a process of communication that takes place between the translator and the author of a certain text that needs to be translated. It is a critical process as without it a translation job can go wrong (Littau, 2016).

The Arabic language has a creative mechanism for developing its lexical system. The different Academies of the Arabic language and many Arab universities, being active for decades, have translated many scientific books, produced specialized linguistic and scientific dictionaries and are working out the solution for relevant linguistic issues. But, the current status of translated and Arabicized scientific terminology is not up to the expected levels of frequency and dissemination. Different factors determine the frequency and dissemination of this terminology. One of these factors is that the Academies of Arabic language have a low profile in the Arab cultural scene; their huge terminology work of translation and Arabicization is not well-publicized and promoted to the target discourse communities (Al-Douri, 2018). Another factor is the incompatibility of these Academies, which resulted in plurality and abundance of the terminology (Buni Dhiab, 2012; Hamdan, 2007; Hashimee, Rosnan, & Shafri, 2019). There is a dire need to address the obstacles of Arabic scientific terminology and how these obstacles affect learners. Therefore, the study aims to assess learners' preferences and attitudes towards translated and Arabized scientific terminology.

Based on the aim of the paper, the study has designed the following objectives:

1. To assess learners' preferences and attitudes towards translated and Arabized computer terminology.
2. To address the obstacles of Arabic Scientific terminology and how they affect the learners.

Literature Review

Due to the rapid progress in science and technology, knowledge explosion is a challenge to a particular language and a challenge to human language in general. Any language could not instantly absorb the terminology emerging from the advances of science and technology. The Arabic language has been amid this challenge. It has long been in contact with other languages, which were brought by the Arabs in earlier trade activities and fostered later by the great influence of Islam. Throughout this history, the Arabic language has developed different methods to deal with the flow of foreign words in general and foreign terminology in particular. A very effective one of these methods is Arabization. This section of the paper will attempt a survey of the literature relevant to the subject of Arabization.

The interest in Arabization is evident in the heritage of Arab linguists. It involves providing its definition, methods, mechanisms, challenges and problems. The Arabs used "*al-Mŭrrab*" (the Arabized word) to refer to a foreign word. Sebaweyeh (1983) defined this term as a word used by the Arabs for meanings that are not found in the Arabic language. The foreign word may fully be adopted by the Arabic language and uttered in Arabic speech, or it may retain its foreign speech character. Al-Jawālīqī (1990) defined Al-Ma'arab as the foreign word used by Arabs in their speech and that which occurs in The Holy Qur'an, the Prophetic Hadith, and the language Arabic in poetry and prose. As cited by Hashimee et al. (2019), Samurai defined the features of Arabization as the transferring of foreign terms into the Arabic language and reshaping its templates only at the superficial level, that is, by changing their letters and structure to suit the Arabic language systems. It is the process that is used extensively in modern scientific terms such as arabizing the term: الكمبيوتر as *computer* or الكاميرا as *camera*.

Arabization is also viewed as a term involving all operations, techniques, and methods involved in rendering scientific/technical terms into Arabic, particularly using Arabic and Arabized words and phrases (Ghazala, 2013). A term in Arabic can be created by one of three methods; translation, linguistic generation and lexical borrowing (Khasara, 2018). Translation provides an Arabic equivalent of the foreign word using an existing lexical item. A terminological usage would characterize a linguistic item with a common meaning. The sources of translating Arabic terms are dictionaries, whether linguistic or specialized, linguistic books, Arabic scientific heritage books and the Arabic dialect. Linguistic generation means creating a new word with

a sense or connotation that does not exist in the old or modern language but definitely, it has its roots in Arabic. Lexical borrowing or phonetic Arabization transfers the exact wording of the foreign term into Arabic after refining and modifying its structure to adjust the Arabic phonetic system. An example of an ancient Arabicized form is *firdaws* (paradise), and a contemporary one is *tilfizyun* (television).

The challenges of the translation and Arabization of scientific terminology are attracting much attention in recent research. The history of the Arabic language proves its ability to overcome the difficulties of the inclusion of new foreign meanings and conceptions. The Arab linguists and scientists worked out new words and terminology through translation, derivation and Arabization processes to satisfy the need for the wide transfer of science and knowledge from European sources, especially during the periods of the prosperous Umayyad and Abbasid states. The Arabic language has proved its vitality and faculty for absorbing new meanings and making new terminology, as seen in the heritage of early Arab linguists and lexicologists (Khalifa, 1987).

There is evidence of the reluctance of early Arab speech communities to use Arabized terms (Al-Jawālīqī, 1990). Al-Jawālīqī (1990) reported that Arab linguists made efforts to introducee foreign words into Arabic. They modified these terms to fit with Arabic phonetic, morphological and syntactic aspects. They also set rules for changing the forms of these terms to allow their Arabization via the processes of substitution, addition, deletion, and movement. Still, the public did not observe these restrictions. They uttered the Arabized words as they heard them from their foreign sources, so their tongues fostered and habituated the original formulas of these terms.

Al-Asal and Smadi (2012) suggest Arabization or utilizing Arabic in education as a medium of teaching and a tool of expression in their study on Arabic-expanding and Arabization methodologies. However, the fundamental issue in English-Arabic technical translation is not a decision between a foreign language and Arabic but rather a choice between the Arabic and Arabicized word. When the number of SL technical terms is rapidly increasing, the usage of foreign words as productive roots for new derivations of scientific terminology in Arabic becomes ever more contentious. Also, examining if the users' opinions on particular translations they feel acceptable for daily usage should be considered in technical translation, which is based on the distinction between technical slang and formal vocabulary (Hassan, 2017). The current state of inadequate translation and Arabization of scientific terminology is not relevant to linguistic matters. Still, it is attributed to the policies that dominate the Arabic education institutions that de-emphasizes the role of the Arabic language in scientific domains for different reasons (Khalifa, 1987).

The making of Arabic scientific terminology was carried out by antipode methods (Al-Khuri, 1998). Some of these were adhered to data based on Arabic linguistic heritage and were strict vis-à-vis the Arabized and foreign words. Others were less restrictive and lacked an accurate methodology for choosing the term. Al-Khuri proposed two factors that contributed to the dilemma of Arabic scientific terminology. The first was the time lag in setting the Arabic counterpart of the foreign term. The second factor was the multiplicity of the Arabic counterpart. The Arabic counterpart is often thought of and set after people already used the foreign term with its exact wording or invented an improvised Arabic equivalent that did not make a good choice.

The problem of making Arabic scientific terminology is attributed to the lack of clear policy or methodology agreed upon among those working in Arabization institutions abide (Hamdan, 2007). Consequently, the process of transferring and Arabizing foreign terms were subject to different perspectives and views. A foreign term may not have the same Arabized form in different countries and dictionaries and to different individuals, leading to the phenomenon of anarchy of Arabic terminology. Evidence of this incompatibility is provided by Hashimee et al. (2019). The study refers to a book on modern mathematics developed by UNESCO. The book was translated into five different Arabic versions; Egyptian, Iraqi, Syrian, Kuwaiti, and Jordanian.

The challenges of Arabization came from two main axes (Hashimee et al., 2019); an internal axis, which is the incompatibility of the linguistic institutions (as shown earlier) in uniting their efforts in Arabization, as well as the unfortunate reality that the language of Arabic has suffered from both classical and colloquial duplication. The researcher also referred to the inefficiency of Arabized terminology. The inefficiency of the terminology means its inability to perform its role at the practical level on one hand and its failure to convey the required meaning at the theoretical level on the other hand. This weakness leads to the disaster of the occurrence of calque and loanword words in the Arabic language when the speech community sees the unworthiness of Arabized terms in use, and they tend to use common and circulated foreign terms.

Another source of Arabization challenge is the duality in the Arabic language, as seen in the presence of two levels within the language. One of them is standardized/ formal language used in official occasions, literary writing and education, and the other is the level of the colloquial language, or vernacular dialects, used in daily life. However, if we look at the reality of the situation, we will find a predominance of colloquial and reluctance of Arab speech communities to depend on the formal language. The colloquial even exceeds the scope of the dialect to become independent from the formal language. The real danger is the increase in foreign terms in the vernacular language since the colloquial is not sensitive to the restriction issues of Arabization. In their colloquial language, the public often pronounces the foreign terminology as it appeared in its original language, not bothering themselves with Arabizing and analyzing these terms.

Buni Dhiab (2012) referred to the efforts of scientific and linguistic institutions in various parts of the Arab world in Arabizing scientific terminology and translating a group of scientific books in various sciences in some Arab universities. Despite unbiased efforts, it led to the abundance and its plurality, which ended with terminological anarchy and a fragmentation of the scientific language. This abundance became an insurmountable invincible obstacle to the path of Arabization.

However, the positive effect of Arabization is also reported thus: "There are significant indicators of the experience of the Jordanian Arabic Language Academy in the Arabization of university scientific reference books. The evaluation of this experience has proven that learning science in Arabic is easier than in English. After Arabization, the rate of success and achievement increased significantly" (Buni Dhiab, 2012). The techniques, information systems and the global media contribute to creating and promoting the culture of globalization, which raised a set of problems in thought, culture and civilization privacy, especially in the Arab world. The rapid development of communication allows a flow of foreign words and new terminology in our current age. Research has reported usage of popular Arabized forms for the lexical item that has standardized Arabized forms (Najeh, 2009), for instance كنسل (مكتئب); مدبرس depressed; (تهيئة ملف) فرمت format;

(اختلق-الخبر) فبرك fabricate; (حذف) دلت "I" deleted; (خططت) برمجت "I" programed ; and (حفظت) سيفت "I" saved. These popular Arabized forms may not be standardized ones, but they indicate poor linguistic knowledge of the users' mother tongue once these words have Arabic equivalents.

Despite the efforts made by Arabic Language Academies to introduce Arabicized and translated terminologies forms into the Arabic language, their proposed terms fail to gain acceptance and circulation among users of the Arabic language (Al-Douri, 2018) . Al-Douri (2018) attributed this failure to factors such as the non-appealing status of the proposed Arabicized terms to Arab specialists or the educated non-specialists. Another factor is the academies low profile in the Arab cultural scene; there is a *lack of familiarity* with the academies' huge terminology work of translation and Arabicization.

Khuwaileh (2010) tackled the computer linguistic terminology used wrongly or vaguely by Arab computer users in academic institutions and English Arabic translators. The investigation was carried out in two Arab countries (Jordan and the UAE). The study attempted to determine whether modern computer terminologies generated in English and used in Arabic were correctly translated or not based on textbooks used by academic institutions in Jordan and the UAE and by translators. The study showed the failure of school and university textbooks, translators and dictionaries to find all the equivalents in Arabic necessary for modern computer terminologies generated in English. Formal textbooks used in the academic institutions in the two countries including inappropriate translations. Due to the individual differences among Arab translators and academic books authors, the difference and contrast in proposing equivalents in Arabic can be noticed, ranging from using the same English word in Arabic to proposing strange and perhaps inaccurate equivalents. The study indicated some failure in Arabic academies in Cairo, Amman and Damascus in providing the Arabic equivalents for modern computer terminologies at the right time.

Al-Laham and Halas (2016) investigated the attitude of Science majors towards Arabization and its relationship with scientific achievement. The study showed that most subjects stressed the role of Arabization in maintaining Arab identity and the Arabic language. They further confirmed that Arabization raises their scientific achievement and helps them practice super thinking skills. Some recent research shows interest in the web sources of technical terminology. Hassan (2017) assesses the English Arabic terminology in the Microsoft Terminology Collection MTC (an online IT glossary) to identify the kinds of translation strategies that MTC follows. Data analysis of the selected sample reveals that: "MTC uses translation, Arabization, and Arabic-expanding techniques inconsistently, either in providing more than one translation for a standard technical term within the same translation situation or in using different translation strategies for similar technical terms in similar translation situations" (Hassan, 2017).

The current study highly recommends using translation and Arabic-expanding techniques (mainly derivation and compounding) with technical terms derived from common linguistic roots in the source language (SL) rather than the technique of Arabization. This choice could be congruous with the call to preserve the integrity and authenticity of Arabic as a target language (TL) at a time of a marked increase in the number of SL technical terms.

Methodology

Research Design

This study used a cross-sectional research design, to assess the attitude of computer science majors toward translated and Arabized scientific terminology. The research aimed at measuring learners' interest in Arabization and examining their familiarity with the linguistic challenges of the processes of Arabization.

Instrumentation

Two research tools were developed as instruments of this study. The first tool was a test that aimed at rating learners' preferences for translated and Arabized scientific terminology. The test provided optional equivalents for 25 foreign target terms. Each target term had three options; a translated form, an Arabized form, and the third was another variety of the two forms. The second instrument was a questionnaire, comprising ten items to which participants responded via a 5-point Likert rating. It was designed to assess their attitudes toward translated and Arabized scientific terminology.

The 25-item test on computer terminology was adapted from the following:

- Mejm Alhasibat (Dictionary of Computer) Academy of the Arabic 2nd edition 1995.
- Mejm Mustalahat Alhasibat (Dictionary of Computer Terms) by Academy of the Arabic Language by Shadia Muhamad Shaoqi Al'alem et al. 4th edition 2012.

Sampling and Procedure

A sample of 159 students participated in this study, who were majoring in computer science at the College of Science and Humanities, Prince Sattam bin Abdul-Aziz University, Kingdom of Saudi Arabia. The test was designed to assess learners' preference for translated and Arabized computer terminology. The researcher developed web-based survey tools for data collection. The Google Forms, a cloud-based data management tool, was used to design and develop web-based questionnaires which included a test and an attitude questionnaire. The tests were sent to the target sample via a link. For each foreign term, participants were asked to choose from three options. The first option covered the category of translated terminology; the second represented the category of Arabized terminology; the third item included phrases that combined translated and Arabized words.

Data Analysis

The data was analyzed by rating learners' interest in the question of Arabization and their awareness of its significance. Their familiarity with the linguistic challenges of the processes of Arabization was also analyzed. The data was processed using the Statistical Package for Social Studies (SPSS) program. Some descriptive statistics, such as mean, median, and standard deviation, were used to identify any significant differences in the independent variables in the study.

Results and Discussion

Reliability of Instrument

The split-half method was used to assess the test's internal consistency (Table 1).

Table 1. *Reliability Statistics*

Measure			
Cronbach's Alpha	Part 1	Value	0.715
		No. of items	3a
	Part 2	Value	0.867
		No. of items	12b
		Total No. of items	25
		Correlation Between Forms	0.808
Spearman-Brown Coefficient	Equal length		0.894
	Unequal length		0.894
Guttman Split-Half Coefficient			0.894

Cronbach's Alpha coefficient was excluded because it did not provide equal reliability values for the two parts. Table 1 shows a difference between the first half's stability and the second half's stability (0.715 for the first group and 0.867 for the second group). Spearman-Brown coefficient reports 0.894, but the variances of split-halves are not equal (Table 2). The value of 0.894 of the Guttman split-half coefficient is accepted for the reliability of the test since this method does not assume equal variance of the two halves. Table 2 presents the scale statistics of the items.

Table 2. *Scale Statistics*

No. of items	N	Statistical measure	Mean	Variance	Std. Deviation
1	13a	Part 1	19.65	12.981	3.590
2	12b	Part 2	17.83	12.408	3.523
3	25	Both parts	37.48	45.744	0.763

Reliability of the Questionnaire

The reliability of the questionnaire was established through Cronbach's alpha (see Table 3), and α = 0.672 was obtained.

Table 3. *Reliability test*

Cronbach's Alpha	No. of items
0.672	10

Descriptive analyses were initially done to determine the average level of the data concerning each variable. The results are presented in tables 4, 5 and 6 and Figure1. Results generally indicate a moderate mean (average mean value of 1.41 out of 3) for most test items (Table 4). The standard error of the Mean is small, which indicates that the data is more representative of the true mean.

Table 4. *General statistics of the Test*

Item	Statistical measure		Mean	Std. Error of Mean	Mode	Std. Deviation	Min	Max
	Valid	Missing						
Internet	2	1	0.466	2	0.037	1.69	0	159
ram	3	1	0.820	1	0.065	1.65	0	159
domain	1	2	0.387	1	0.031	1.18	0	159
gadget	1	2	0.479	1	0.038	1.35	0	159
mouse	2	1	0.428	1	0.034	1.24	0	159
spam	3	2	0.491	3	0.039	2.60	0	159
Code System	3	1	0.950	1	0.075	1.68	0	159
Cache Memory	2	1	0.392	1	0.031	1.19	0	159
ROM	3	1	0.887	1	0.070	1.74	0	159
script	2	1	0.488	1	0.033	1.38	0	159
keyboard	2	1	0.411	1	0.033	1.21	0	159
CPU	2	1	0.387	1	0.031	1.18	0	159
Hard Disk	2	1	0.435	1	0.035	1.25	0	159
format	2	1	0.501	2	0.040	1.53	0	159
MotherBoard	2	1	0.340	1	0.027	1.13	0	159
webcam	2	1	0.416	2	0.033	1.78	0	159
software	2	1	0.461	1	0.037	1.30	0	159
computer	2	1	0.492	1	0.039	1.40	0	159
modem	2	1	0.499	2	0.040	1.55	0	159
boot	2	1	0.499	2	0.040	1.55	0	159
USB	2	1	0.485	2	0.041	1.63	0	159
laptop	2	1	0.488	1	0.039	1.38	0	159
filter	2	1	0.501	1	0.040	1.47	0	159
BASIC	2	1	0.468	2	0.037	1.68	0	159
data	2	1	0.318	1	0.025	1.11	0	159

It should be noted that the test assessed learners' preferences, so no correct or incorrect answers were sought. Scores did not provide significant information, while answers only indicated the probability of what learners preferred.

It is obvious from Tables 5 and 6 that respondents generally prefer translated terminology to Arabized one. The highest percentage (60%) goes to translated terminology. This preference may be attributed to the fact that translation, unlike Arabization, produces wholly and pure Arabic forms, so learners with their linguistic intuition would not feel any anomaly in the translated form. But this feature does not always work.

The second category of terms assessed by the test is Arabized terminology. A considerable percentage of 36% of the respondents prefer the use of terminology which belongs to this category. As observed from the data, respondents' preference for Arabized terminology could be interpreted concerning how these terms are produced or received. First, there are single foreign terms for which the Arabic language has produced translations that are phrases made up of two or more words, as illustrated by the terms such as: برنامج نصيScript ; مُضَمّن فاك Modem; انهاض الكمبيوتر Boot. The un-brevity of these phrases, in addition to their semantic complexity, did not encourage respondents to choose them.

Table 5. *General statistics of the test*

No	Target term	Preferred term category	Percentage
1	Ram	translated	57.2
2	Domain	translated	59.
3	Data	translated	86.8
4	Gadget	translated	35.8
5	Mouse	translated	66
6	Laptop	translated	52.2
7	Code system	translated	36.5
8	Cache memory	translated	40.3
9	ROM	translated	55.3
10	Keyboard	translated	78.6
11	CPU	translated	54.1
12	Hard Disk	translated	66.7
13	Software	translated	50.35
14	Mother Board	translated	79.9
15	Mother Board	translated	79.9
16	Format	Arabized	52.8
17	Internet	Arabized	69
18	Webcam	Arabized	51.6
19	Script	Arabized	38.4
20	Modem	Arabized	54.7
21	Boot	Arabized	55.3
22	USB	Arabized	57.9
23	Filter	Arabized	47.2
24	BASIC	Arabized	67.9
25	Spam	mixed	40.9

Table 6. *Percentage of term categories*

No.	Category	Number	Percentage
1	Translated	15	60
2	Arabized	9	36
3	Mixed	1	4

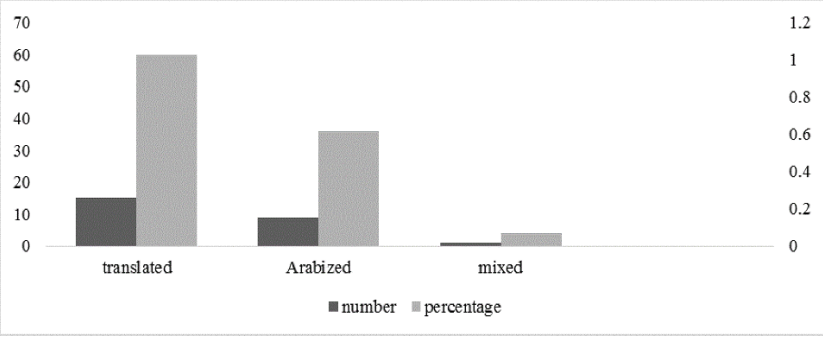

Figure 1. *Frequency of terms*

A few terms that developed from particular abbreviations, such as BASIC and USB, had complete Arabic forms. Their full forms constituted long phrases that might not be preferred for un-brevity. They are further disapproved by respondents, as shown from the questionnaire data in Figure 2.

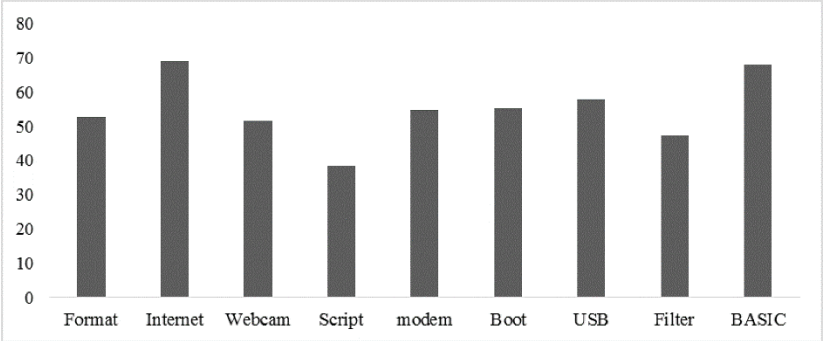

Figure 2. *Frequency of Arabized terms*

The questionnaire data determined the criterion adopted in the study (see Table 7 below), the cell length was determined in the Likert pentatonic scale by calculating the range between the scale grades (5 - 1 = 4) and then dividing it by the largest value in the scale to obtain the length of the cell (i.e., 4 = 5 = 0.80), after which this value was added to the lowest value in the scale (the beginning of the scale, which is one true "1"). This was to determine the upper limit of this cell, and the cell's length became as follows: (Range = 5 - 1 = 4 [Highest value - Lowest value]) and (Length of the cell = 4 ÷ 5 = 1.80 [range/number of steps]). The number 1.80 was added to the lowest value on the scale and was the integer number (1) used to set the maximum.

Table 7. *The Criterion of Study*

Level of agreement	Cell length
Very low	1.00-1.80
Low	1.81-2.60
Average	2.61-3.40
High	3.41- 4.20
Very high	4.21-5.00

Table 8 shows the statistical description of the questionnaire items. It generally reveals that the mean of the questionnaire's statements obtained a high degree. The mean scores ranged between 3.6604 and 4.2138. The highest mean score (4.2138) goes to statement (3), "*Knowledge and use of translated terms enhance language identity*", indicating learners' awareness of the issue of language identity, which is the keystone of the question of Arabization. The lowest mean (3.6604) is scored by statement (8), which assumes that "the Arabized terminology proves the flexibility of the Arabic language because the foreign term becomes an Arabic form in the end.

Table 8. *Descriptive Statistics of the Questionnaire*

	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10
N	159									
Mean	4.1950	3.9371	4.2138	4.0692	3.9182	3.7358	4.0503	3.6604	3.8239	3.7107
Std. Deviation	.78336	.85452	.88135	.98803	.94781	.99653	1.10120	.99892	1.09968	.90949
Median	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
Std. Error of Mean	.06212	.06777	.06990	.07836	.07517	.07903	.08733	.07922	.08721	.07213
Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

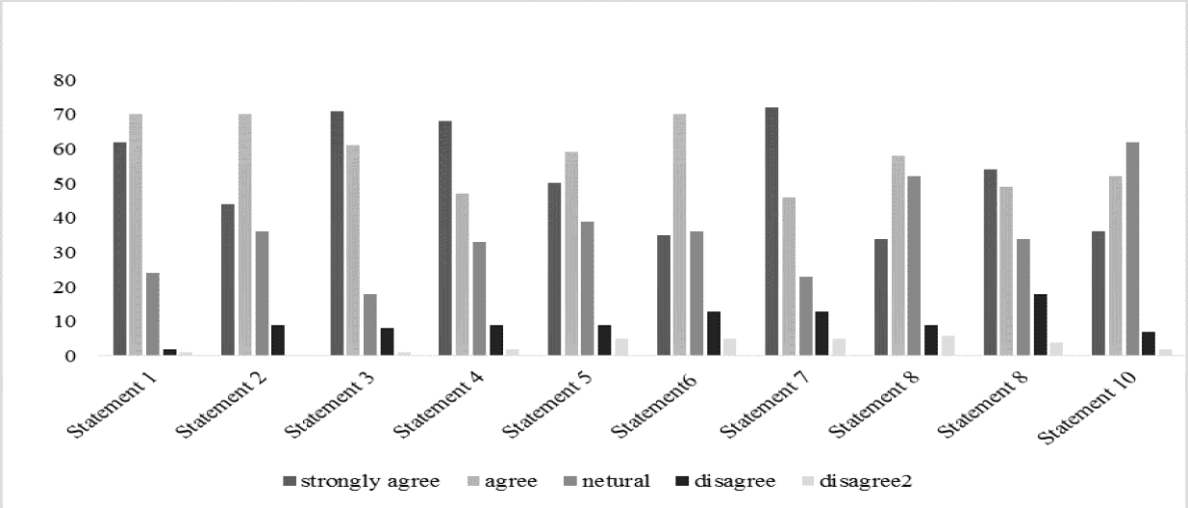

Figure 3. *Frequency of the questionnaire items*

It can generally be seen that the difference between the means of scores is statistically significant (the significance value is ≤0.05). The results reveal typically that the questionnaire items have obtained an arithmetic mean greater than the hypothetical mean [M=3] approved in the study. By extrapolating the statistical results shown in Figure 3 and Table 8, there are statistically significant differences at (α≤0.05) between the averages of the answers of the study sample and the hypothetical means approved in the study (hypothetical M=3). These appeared in favor of the answers of the study sample, which means there is some agreement among the respondents on the items assessed by the questionnaire and that learners shared similar beliefs and attitudes towards Arabization.

Results generally indicate a moderate mean for most of the statements, except for the following statements: Statement 6 "I find it difficult to understand some of the compounds translated terms", statement

8 "The Arabized terminology proves the flexibility of the Arabic language because the foreign term becomes an Arabic form in the end," and statement 10 "In light of the explosion of knowledge and the influx of foreign scientific terminology, the role of translation and Arabization in creating Arabic terminology for foreign terminology is complementary".

The above three statements rate learners' opinions about the linguistic efficiency of the Arabic language to absorb foreign terminology. Very low levels of agreement were reported for these statements, as indicated by the low mean scores. As stated earlier, in the questionnaire, a high mean is also scored for item 1&7, which are respectively stated thus: "Some translated terms are long-phrase in contrast to their Arabized ones which could be single words." "As for the terminology consisting of abbreviations such as "RAM", I find it easier to deal with the Arabized form than the translated one." These two statements indicate that learners seem to share a similar belief that Arabized terminology is of more practical usage than the translated one. For instance, the Arabized option 'رام' for the English RAM is preferred by learners because the Arabic translated terms provide a complete translation of 'Random Access Memory.

Table 8 showed that the median for all statements is 4, interpreted according to the Likert scale as *agree*. This suggests that participants widely agreed with the questionnaire statements to confirm the research hypotheses that learners have a positive attitude towards Arabization. However, the frequencies of the responses to the tenth "In light of the explosion of knowledge and the influx of foreign scientific terminology, the role of translation and Arabization in creating Arabic terminology for foreign terminology is complementary" clearly reveal uncertainty among teachers as seen by the high percentage of the option *"neutral"* (Table 9).

Table 9. *Frequencies of Statement 10*

	Frequencies	**Percentage**
Strongly disagree	2	1
Disagree	7	4
Neutral	62	39
Agree	52	33
Strongly agree	36	23
Total	159	100

Overall, findings reveal learners' positive attitude towards Arabic computer terminology but translated terms gain more preference than Arabized ones. This preference may be attributed to learners' linguistic intuition, which makes them inclined to translate forms that are pure and native like Arabic forms, so they would not find them anomalous. The bias toward translated terminology further fosters the learner's linguistic identity. These findings align with those of Hassan (2017) that it is more appropriate to use translation and Arabic-expanding techniques (mainly derivation and compounding) with technical terms derived from common linguistic roots in the source language (SL) to preserve the integrity and authenticity of Arabic as a target language.

Learners' preference for translated terminology indicates some sort of familiarity with native terminology in general. This familiarity is the fruit of continuous efforts of classic and contemporary Arab linguists and lexicologists in translating scientific terminology, as seen in their abundant production in this regard. These findings are in line with those obtained from the study of Mazzetti (2017) that these efforts prove the validity and efficacy of the Arabic linguistic system to provide Arabic equivalents for foreign terminology. The study also reveals learners' positive attitudes towards Arabized terminology. Similar findings were reported in a survey by Al-Laham and Halas (2016), which stresses the significance of Arabization to maintain language identity.

Conclusion

This study assesses learners' preferences and attitudes towards translated and Arabized scientific terminology. It addresses the obstacles of Arabic scientific terminology and how these obstacles affect learners. The current status of translated and Arabicized scientific terminology is not up to the expected levels of frequency, despite the productive and creative Arabic linguistic system allowing massive production of scientific terminology. To sum up, the multiplicity of translated forms of the foreign term is inevitable due to the diversity of translation techniques and methods. However, there is a practical need to introduce unified Arabic terminology, which is more significant for pedagogical practice. It is also necessary to make Arabic a tool for scientific acquisition and transmission.

The study findings have indicated that the status of translated and Arabicized scientific terminology is not up to the expected levels of frequency and dissemination. The study reiterated the awareness about the Arabic language that it had a creative mechanism for developing its lexical system. Findings revealed learners' positive attitude towards Arabic computer terminology but translated terms also gained more preference than Arabized ones. The learners' preference for translated terminology indicates familiarity with native terminology in general. The learners' positive attitude toward Arabized terminology, stressing the

significance of Arabization to maintain language identity. The multiplicity of translated forms of the foreign term is inevitable due to the diversity of translation techniques and methods. The practical implications on the field of study include a practical need to introduce unified Arabic terminology, which is more significant for pedagogical practice. It is also necessary to make Arabic a tool for scientific acquisition and transmission.

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