

The Arabicization of Medical Terms in Light of Language and Terminology Planning

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1.1 PREFACE

Language has gained popularity since it is a cultural bridge among all nations all over the world, a means of communication and a means of science and technology transfer.

Due to the intensive flow of scientific and technological terms, and the need for Arabic to keep up with the scientific movements and developments, Arabic language Academies were established as landmarks in different countries in the Arab World to emphasize the need for creating new terminology in Arabic. It is noteworthy that the processes of term creation in Arabic as determined by the Scientific Academy of Damascus are listed in EI-Mouldoudi (1986:3) as:

1. Instinbat: revival of archaisms and semantic extension of terms.
2. Ishtiqaq : derivation.
3. Naht: compounding.
4. Ta'reeb: Arabicization.

The researcher's main concern in this study is with the last process of term creation (Ta'reeb/Arabicization). The basic support of Arabicization process comes from formulation, unification and promotion of terminology.

In a unique and brave step, the Academy of Arabic Language in Jordan has saved no effort in the process of Arabicization of one of the most popular and widely used textbooks on surgery

entitled BAILEY & LOVE'S SHORT PRACTICE OF SURGERY as part of its attempts to Arabicize science education at college level. The main goal of Arabicization of this textbook of surgery is to unify and standardize the Arabicized medical terms in Jordan and in the Arab World. The Arabicized edition was published in 1997. Therefore, the Arabicized terms used in this edition should have at least partially achieved the expected goals by being well known, properly used, adopted and highly accepted by the physicians and students of medicine.

In an attempt to get preliminary investigation of the topic of this study, the researcher conducted a pilot study in which a 100 medical terms from the book entitled BAILEY & LOVE'S SHORT PRACTICE OF SURGERY Arabicized by the Academy of Arabic Language in Jordan were selected. The terms were then distributed to about 30 medical specialists to get their feedback regarding their familiarity and acceptance of the Arabicized terms. The results. Furthermore, the Arabicized terms selected were characterized as problematic.

Based on the pilot study, the researcher's observations indicate that the Arabicized terms have not achieved the expected goals and results because almost all of them have not heard of this edition. Furthermore, some physicians or even students of medicine do not use the Arabicized terms properly and they refuse to use medical terms rendered into Arabic. This indicates that the Arabicization of medical terms in this edition accomplished by the Academy of Arabic language in Jordan encounters some problems mainly the problem of acceptability and proper use. To find out these problems in an attempt to solve them, it is important to study the terms produced by the Academy of Arabic Language in Jordan.

This study aims at evaluation the usage and acceptability of these Arabicized medical terms. Evaluation is one of the steps included in the activities of language planning (LP). Rabin

The Arabicization of Medical Terms

(1971:221) defines evaluation in language planning as “a process through which information might be provided to help determine which kinds of decisions seem to be best of several alternatives”. In this work, the researcher investigates the extent of acceptability and criteria for acceptability of the Arabicized medical terms according to the users (physicians and students of medicine) depending on the five criteria of acceptability: knowledge, evaluation, usage, adoption, and proficiency (Cooper, 1989). Thus, language planning and terminology planning are tools for examining and probably solving language and term problems. Furthermore, they can be applied by the researcher to point out some problems of Arabicization of medical terms and try to provide and suggest plausible solutions for them.

1.2 *PURPOSE OF THE STUDY*

The present study is expected to provide answers for the following questions as main objectives for this study:

1- To what extent is the Arabicization of medical terms in the textbooks of medicine done accurately?

2- To what extent are the medical terms Arabicized by the Academy of Arabic Language acceptable by the users (physicians and students of medicine)?

3- What are the factors that determine the acceptability of the Arabicized medical term?

4- What are the criteria for acceptability of the Arabicized medical term?

5- To what extent are the five criteria of acceptability (knowledge, usage, evaluation, adoption and proficiency) influenced by

- (A) The physician's gender.
- (B) Place of work.
- (C) Degree of specialization.
- (D) Field of specialization, and

(E) The physician's competence in both English and Arabic.
6- To what extent is the acceptability of the Arabicized medical terms influenced by.

- (A) The physician's gender.
- (B) Place of work.
- (C) Degree of specialization.
- (D) Field of specialization, and
- (E) The physician's competence in both English and Arabic, which depends on the language of instruction in which the physician got his medical training and education.

7- What are the physician's attitudes towards the idea and outcome of Arabicization?

8- Is there a gap between what is published by the Academy of Arabic Language in Jordan and what is actually used by the physicians and students of medicine?

9- Are there any reason other than linguistic ones behind the low level of acceptability of the Arabicized medical terms?

1.3 SIGNIFIANCE OF THE STUDY

The significance of this study lies mainly in measuring the extent of acceptability of the Arabicized medical terms particularly in the field of general surgery done by the Academy of Arabic Language in Jordan. It should be recognized that this study has emphasized and focused on selected terms that are deemed problematic to potential users. Moreover, this study highlights the issue of adopting and specifying approval criteria to measure the acceptability of the Arabicized medical terms.

Another aspect of the significance of the study lies in attempting to investigate the attitudes of physicians and students of medicine towards learning and using Arabic as well as learning and using English. It is believed that the study is important since it enriches the literature of language planning and term planning

The Arabicization of Medical Terms

within the process of Arabicization in Jordan as well as the Arab World in general. It is anticipated that the study will point to the areas of trouble in accepting and implementing the translated medical terms in surgery. In addition, it is hoped that this study will add to the science of language planning and terminology planning both of which facilitate the work of translators, scientists, terminologists, and language academics.

1.4 STATEMENT OF THE PROBLEM

The major problem that this study investigates is the extent of acceptability of some Arabicized medical terms taken from an Arabicized medical textbook on surgery accomplished by the Academy of Arabic Language in Jordan based on the measures of acceptability: knowledge, evaluation, usage, adoption, and proficiency (Cooper, 1989). As mentioned above, emphasis has been placed on selected terms that can be classified as problematic.

The researcher investigates the attitudes of physicians and students of medicine towards the Arabicization of medical terms. The attitudes of physicians and students of medicine towards the process of Arabicization in general and the Arabicization of medical terms in particular have not been examined yet, thus, the researcher feels that there is an urgent need to tackle this issue. Finally, the researcher investigates the criteria that could be taken into consideration in the process of Arabicization of medical terms to gain acceptability by the users (physicians and students of medicine).

1.5 LIMITATIONS OF THE STUDY

The results, conclusions, and trends reported in this study should be limited to what is strictly presented in the study under the given conditions and circumstances under which the study is

conducted. This is so due to several limitations the most important of which are.

1- Despite the fact that similar studies in other fields reported similar results, the findings reported here should not be generalized or projected with the same degree to terminology in all other fields of knowledge, rather, be limited to the field of general surgery.

2- Although the sample size of this study (100 subjects) is statistically acceptable, it is felt that a larger sample (1000 subjects, for example) would produce better results given the diversity of the members of the medical profession in Jordan.

3- The results reported here should be interpreted keeping in mind that the number of physicians who got their medical training in Arabic is very low.

4- The results reported in this study should be interpreted in mind that the terms selected for the study are a random sample of terms characterized as being problematic.

2.1 *DEFINITIONS OF BASIC TERMS*

2.1.1 Language Planning

Language planning (LP) is relatively young as a field of academic inquiry. This term was first coined in (1957) by Uriel Weinreich. During language planning history, the orientation moves from seeing chiefly planning as a tool of standardization in the period (1935-1959), to seeing it as the study of language problems and their solutions (1960s), to the study and practice of managing language change (1970s), to an awareness that it is necessary to evaluate language change. The idea of language as a plannable societal resource developed as an area of sociolinguistic research which became a field in its own right in the 1960s.

Since then, language planning has been defined by many scholars and writers and many different names have been given

The Arabicization of Medical Terms

to it such as language determination, language policy, language cultivation, language implementation, language engineering, corpus planning, status planning, and acquisition planning, but of all the terms in use today, language planning is the most popular (AL-Abed AL-Haq, 1998).

Through as intensive literature search, the researcher in this study has come up with the definitions of these different names of language planning. Garvin (1973) states, "the selection of an official code from two or more is language policy". This policy is a decision-making process which concerns the objectives of people formulating that policy. In this regard, Eastman (1983) says, "the formulation of language policy is a process of deliberative and decision-making. The main political deliberative factor in language policy formation is the goal of the body (for example, the nation) formulating the policy".

Language cultivation deals with matters of language. In this regard, Paulston (1974) considers the development and maintenance of a standard written form of a language as a matter of cultivations. "(m)ost frequently, a matter of selecting one norm from several regional variations is a matter of language cultivation". (Garvin, Ibid).

The language implementation has to do with how a plan is put into operation to achieve a stated goal. Language standardization is the process of having or obtaining a standard language which is according to Eastman is "a particular dialect chosen by authorities to be standardized; that is, it is selected as the language of reading and writing." In our study, the language is Arabic. Language elaboration, Eastman says, is "The extension of the decided-upon languages (s) or writing system(s) to all spheres of activity in which its use is envisioned". The elaboration aspect of language is generally handled by a language academy or language planning agency. Language academies are language planning agencies that make decisions about the

direction of language policies. For example, the four Arab academies, namely, Syrian, Egyptian, Iraqi, and Jordanian have addressed policies involving the elaboration of classical Arabic. The main goal of all these agencies is to preserve and renovate classical Arabic as an effective and unified language for all Arabic-speaking people.

Language choice is the first step of language planning. Before a language policy can be formulated, codified, elaborated and implemented, and before a language plan can be said to be, the policy makers need to choose the language(s) that the policy and plan refer to. The planner should choose the national language for communication.

2.1.2 *What is language planning?*

The international Encyclopedia of Linguistics proposes the following definition of language planning (LP):

“A deliberate, systematic, and theory-based attempt to solve the communication problems of a community by studying the various languages or dialects it uses, and developing a policy concerning their selection and use; also some-times called language engineering or language treatment. Corpus planning deals with norm selection and codification, as in the writing of gamers and standardization of spelling; status planning deals with initial choice of language, including attitudes towards alternative languages and the political implications of various choices.” (Bright 1992:310-311).

Jernudd (1977) states “language planning is a branch of sociolinguistics. It is a developing field that sees language as a social resource. As such, language requires planned action if it is to be used to its full potential. Language planning is done through the cooperative efforts of political, education, economic, and linguistic authorities.” Cooper (1989) defines language planning as “language planning refers to deliberate efforts to

The Arabicization of Medical Terms

influence the behavior of others with respect to the acquisition, structure, or functional allocation of their language codes.” However, AL-Abed Al-Haq (1998) quotes Cooper (Ibid, p, 15) regarding the definition above as saying “This definition neither restricts the planner to authoritative agencies, nor restricts the type of target group nor specifies an ideal type of planning”.

The process of planning a language goes through many steps and phases, Kennedy (1983) proposes three major phases for an ideal program of language planning. He says, “first, establishing facts about the situation, isolating the problem, and suggesting alternative strategies and solutions to accomplish the goal of the program; secondly, implementing the favored solution; thirdly, evaluating the program to provide feedback for any necessary revision”.

On the other hand, Jahr (1992) (cited in AL-Abed Al-Haq, 1998:3) states that language planning (L.P) involves Organized activity (private or official) which attempts to solve language problems within a given society, usually at the national level. Through language planning, attempts are made to direct, change, or preserve the linguistic norm or the social status (and communicative function) of a given, written, or spoken language variety of a language. Language planning is usually conducted according to a declared program or a defined set of criteria, and with a deliberate goal by officially appointed committees or bodies, by private organizations, or by prescriptive linguistics working of behalf of official authorities.

Its object is to establish norms (primarily written) which are validated by high social status; oral norms connected with their written standards follow.

This definition differs from Jernudd's (1973) by restricting the planners to official authoritative agencies and high social bodies. Extremely close to Jahr's definition, Fishman (1973) defines language planning as, “the organized pursuit of solutions

to language problems, typically at the national level". From this definition, one may conclude that language planning, to a great extent, is a decision-making process done by a speech community to carry out the intents, purposes, and goals it has for language.

Each language plan has main objectives to be achieved by the concerned authorities. In this regard, Eastman (1983) proposes the main "five objectives" of language planning:

1- Language purification-prescription of "correct" usage and the preservation of the language's "purity".

2- Language revival-restoration of an old language to its previous status or the revival of a dead language. "The Herew revival is the only successful revival of a language so far; this success was due in part to effectively unifying terminology by means of word coining.

3- "Language reform-facilitation of the use of a language through, for example, simplification of its vocabulary or spelling system. " one characteristics of reform as a type of language planning is that , it is generally done while the planning agency is simultaneously carrying out other functions as well, (such as purification or revival). The classic case of language reform is that of Turkish, beginning in 1922 under the rule of Kamal Ataturk.

4- Language standardization-ensuring that one language or dialect in a region is accepted as the major language of that region for general use. The process of standardization is applied to the language itself. The body, or structure of a language is provided with a writing system and grammar, such activity of preparing a language as a standard is referred to as Corpus Planning. Ferguson (1968) proposes three components that are involved in the corpus planning activity:

A- Graphization: refers to the developing of a writing system for a language.

The Arabicization of Medical Terms

B- Modernization: refers to the development of expanded vocabulary and ways to communicate so that the language can be used in all necessary situations.

C- Standardization: refers to creating a model for imitation.

3- Lexical modernization-bridging the gaps between a language's lexicon and new terminology arising from modern technology. This is the case of Arabic language and the core of this study.

It is worth concluding this section by a Table (Table 1) adapted from Eastman (1983:239) to delineate the applications of (LP) (cited in AL-Abed AL-Haq, 1998).

From the Table 1 one may say that any language plan, regardless of its function, involves:

1- Language or lexical choice: by selecting the language(s) that is/are to be planned.

2- Policy formulation or determination: which is done by a planning agency, academy, or theory.

3- Policy codification: by preparing the formulated and determined policy technically.

4- Policy implementation: by putting the planned change into work.

5- Policy evaluation: by evaluating the whole plan to see where changes might be needed to ensure that all goals are achieved and the language planning has worked.

2.2 TERMINOLOGY PLANNING

2.2.1 Introduction

terminology or " nomenclature" (from the Latin nomen Calare) first appeared in French and English at the beginning of the sixteenth century with the meaning of " glossary" or " list of names" (Rey,1995) The notion of a " science of science of terms" as distinct from a science of language gained acceptance only in the second half of the eighteenth century. In 1788, the

adjective "terminologisch" appeared in German by Christian Gottfried Schutz. From 1801 onwards, "terminology" began to compete with "nomenclature" in English, and in 1801. "terminologic" was also documented in French.

As currently understood, terminology is an activity which was developed to enable us to resolve immediate problems of expression and communication. The innovation of terminology as a body of knowledge and as a specific method is mainly needed in technology, and in all domains where there is large-scale circulation of knowledge. Rey (1995) states 'terminology is also an applied science which has three different but interconnected conceptual characteristics. It is a cognitive application, a linguistic application, as well as a social application'.

This science has become an independent discipline in the early twentieth century in response to the evolving information explosion. The latter requires appropriate designation of many newly-created concepts in science and technology. Moreover, appropriate terminology is required to re-enforce the strong interest in an ever increasingly important international communication. In this regard, Sonneveld (1994, pp.1-6) states the rapid progress in science and technology and in the means of communication demand restrictions or even standardization of some forms of language". The rapid expansion of science and knowledge has created an acute awareness of the terminological problems and has drawn the scientists and specialists' attention to the importance of accuracy and precision of terms. "Accuracy and precision of terms are essential for the exchange of information and mutual understanding between subject specialists". Sonneveld (Ibid).

The Arabicization of Medical Terms

2.2.2 What is Terminology Planning?

Sager (1990:2-3) states, "Terminology is the study of and the field of activity concerned with the collection, description, processing and presentation of terms, i.e., lexical items belonging to specialized areas of usage of one or more languages. In its objectives, it is akin to lexicography which combines the double aim of generally collecting data about the lexicon of a language with providing information, and sometimes even an advisory, service to language users".

In addition to this, Sager (Ibid) proposes three meanings of the word "terminology": 1) the set of practices and methods used for the collection, description, and presentation of terms, 2) the set of premises, arguments, and conclusions required for explaining the relationships between concepts and terms, and 3) a vocabulary of a special subject field. There are many other definitions of terminology that can be taken into account. The international Association of Terminology defines "terminology" in a comprehensive outlook: "Terminology is concerned with the study and use of the systems of symbols and linguistic signs employed for human communication in specialized areas of knowledge and activity. It is primarily a linguistic discipline, linguistics being interpreted here in its widest possible sense, with emphasis on semantics (systems of meanings and concepts) and pragmatics. It is inter-disciplinary in the sense that it also borrows concepts and methods from semiotics, epistemology, classification etc. it is closely linked to the subject fields whose lexica it describes and for which it seeks to provide assistance in the ordering and use of designation.

Although terminology has been in the past mostly concerned with lexical aspects of specialized languages, its scope extends to syntax and phonology. In its applied aspect terminology is related to lexicography and uses techniques of information science and technology".

AL-Abed AL-Haq (1998) defines terminology planning as “a process which refers to activities and deliberate efforts to plan for: corpus, status, and acquisition of terms. Thus, corpus term planning refers to purely linguistic issues such as coining new terms, reforming their spelling, and adopting them. It refers in short, to the creation of new forms by word coinage process, the modification of old ones, or the selection from alternative form in a spoken or written code. Term cultivation, reform, standardization, selection, codification, elaboration and modernization represent instances of corpus term planning. Status term planning is mainly concerned with the recognition by government, government-authorized agencies, authoritative bodies, and individuals of the significance or position of terms in all aspects of life. Therefore, coining specialized terms in different functions is a target for status term planning. Acquisition term planning is mainly concerned with the teaching-learning of the newly-coined term”.

Budin (1992) points out that, “(a) theory of terminology planning is now emerging from the traditionally sociolinguistic theories of language planning, theoretical frameworks of terminology research, and from theories of socio-economic and scientific-technical development. Strategies of language planning and terminology planning have been more or less successful in various socio-economic, cultural (including linguistic) and technological environments in different regions of the world”.

2.3 GUIDELINES FOR TERM PLANNING

2.3.1 *Introduction*

In recent years there has been a growing awareness of the need to create terminologies in all languages in which there is technical instruction, and scientific research and development. In order to achieve this objective, there has been recognition of the usefulness of language planning in terminology coupled with a

The Arabicization of Medical Terms

greater realism about the possibilities and limitations of influencing term formation.

Budin (1998) proposes a sufficient definition for the word "Term" He states that, "a term is a designation consisting one or more words which represents a general concept in a special language. A term has to be accepted and used by subject specialists. A new term created to designate a concept is a type of neologism and is called neoterm. "To most languages, there are, in general, three applicable methods that are used to form and create terms: 1) creating new forms, 2) Using existing forms, and 3) translingual borrowing. Sager (1990) distinguished three major approaches to the creation of new designations: 1) The use of existing resource. 2) The modification of the existing resources of language, and 3) The creation of new linguistic entities.

"The existing resources "are the resources in language like the use of simile, i.e, giving new names to new concepts in analogy with existing designations and meanings. Another technique of using existing resources is to call something by the thing it most resembles, i.e., the polysemic nature of designations. The "modification of existing resources" are the most common methods used in language modification and come in several techniques including derivation, compounding, conversion) using the noun as a verb or an adjective used as a noun), and compression. The international Organization for Standardization (ISO) has for many years been concerned with providing guidance on the creation of terms. In this regard, it is useful list here the basic postulates in the ISO document R704 (Naming Principles):

1- Terms should be created systematically with respect to their morphological, syntactic, semantic, and pragmatic characteristics.

2- A Term should conform to the morphology, spelling and pronunciation conventions of the language for which it is intended.

3- Once a term has gained wide acceptance, it should not be changed without compelling reasons and strong certainty that the new term will become accepted as a full substitute.

4- If a new term succeeds only partially in replacing an existing term, the confusion may become worse as this would amount to deliberate synonym creation. In this case it is preferable to introduce a new term.

2.3.2 CRITERIA FOR ACCEPTABILITY OF A TRANSLATED TECHNICAL TERM.

Any newly-created term should be governed by rules, criteria or guidelines in order to gain its acceptability, exclusiveness of existence, and spread of use. Sager (1990) proposes the following list as an example of a highly idealized requirement which, however, can be realized in a strictly controlled government:

- I. The term must relate directly to the concept. It must express the concept clearly.
- II. The term must be lexically systematic. It must follow an existing pattern and if the words of foreign origins, a uniform transcription must be preserved.
- III. The term must conform to the general rules of word-formation of the language which will also dictate the word order in compounds and phrases.
- IV. Term should be capable of providing derivatives.
- V. Term should not be pleonastic, i.e., no unnecessary repetition as for example in combining a foreign word with a native one with the same meaning.
- VI. Without sacrificing precision, terms should be concise and not contained unnecessary information.
- VII. There should not have morphological variants.

The Arabicization of Medical Terms

VIII. Terms should not have homonyms.

IX. Terms should be monosemic.

X. The content of terms should be precise and not overlap in meaning with other terms.

XI. The meaning of the term should be independent of context.

There is much more that could be said on the subject of criteria for acceptability and there are also many criteria that could be taken into account. Tauli (1968:29-37) proposes criteria principles of language ideal which can be good principles for language planners to keep in mind. These principles are:

1- Principle of Clarity: an ideal language must do all the job necessary for its purpose, the means of communication, i.e., it must convey all necessary information and shades of meaning.

2- Principle of Economy: an ideal language must be as economical as possible, i.e. easy for the speaker and listener, the number of linguistic units of the term must be the least possible, the expression must be the shortest possible, and the expression must not convey more meaning than necessary.

3- Principle of Aesthetics: an ideal language must have an aesthetic form, i.e. the linguistic system must be harmonious, there must be symmetry between expression and context, and the expression must be euphonious, rhythmic, varying, brief, expression and must allow for affectivity. Several linguists have emphasized the importance of this principle in particular in language planning and terminology planning.

Following Tauli (1968), Al-Abed Al-Haq (1998), proposes the following requirements for an ideal term:

(a) An ideal term must do all of the jobs necessary for its purpose, the means of communication, i.e., it must convey all necessary information and shades of meaning.

The following principles for clarity are suggested:

(1) The term must convey to the listener all the meanings intended by the speaker. It implies that the term must be unequivocal, this is valid for a term in a context. It is unfeasible for an isolated word, except in scientific terminology.

(2) The meaning of the term must be grasped by the listener easily and quickly.

(3) The term must not contain redundancy.

(4) The greater possibility for semantic confusion, the greater must be the difference in the term.

(B) An ideal term must be economical, i.e., as easy for the speaker and the listener as possible.

The following principles for economy are proposed:

(1) The number of linguistic units of the term must be the least possible.

(2) The term must be the shortest possible.

(3) The more frequent the term, the shorter it must be.

(4) The linguistic structure of the term must be the simplest possible.

(5) The term must not convey more meaning than necessary.

(C) An ideal term must be elastic, i.e., easily adaptable to new tasks.

(D) An ideal term must have an aesthetic form. The following aesthetic principles are proposed:

(1) The linguistic system of the term must be harmonious.

(2) There must be symmetry between the term and the content.

3) The term must be euphonious.

(4) The term must be rhythmic.

(5) The term must be varying.

(6) The term must be brief.

(7) The term expressive.

(8) The term must allow for affectivity.

The Arabicization of Medical Terms

The researcher will apply these criteria on translated medical terms to see to what extent these translated terms follow these proposed criteria.

2.4 ARABICIZATION

The word Arabicization is derived morphologically from the word Araic, the language of Arabs, which indicates appropriately the idea of Arabic (AL-Abed AL-Haq, 1996a:6). Different linguistics have tackled the issue of Arabicization in different approaches. Sayadi (1982:28) points out that Arabicization refers to two different focuses in two different regions in the Arab World. Firstly, Arabicization in the Fast Arab countries refers to lexical expansion, which involves the rendering of new words from existing roots and translation of translation of foreign terms. It also involves the adoption of already existing words through borrowing from foreign languages or reviving and revitalization of older words of the same language. Secondly, Arabicizafton in the North Africa Arab countries includes the following:

- a. Introducing Arabic to replace foreign languages in different fields of human activities.
- b. Lexical elaboration and modernization.
- c. Making Arabic the only languages in administratin and daily life activities.
- d. Opposing and rejecting all those who are against Arabicization.
- e. Making Arabic the language of heart and hearth.

Ali (1987:86) considers Arabicization as "a method of lexical expansion whereby linguistic elements of non-native origins are takes over and used in the language" AL-Abed AL-Haq (1996b:8) mentions that Arabixization planning refers to

'conscious effort to influence the behavior of others with regard to: the status, corpus, and acquisition of Arabic.

Finally, the researcher hopes that this short survey of related definitions of language planning terminology planning, and Arabicization will help the reader be familiar with these concepts.

2.5 REVIEW OF RELATED LITERATURE

Many studies have tackled the issues of languages planning and, terminology planning and the process of Arabicization in the Arab World in general, and in Jordan in particular. These issues are of interest to most linguists for their significant role in the work of language academies which lack uniformity and standardization.

Sawaie (1986) investigates the role of language planning academies in different Arab countries focusing on the creation of scientific and technical terminology, and the methods that are adopted by these academies in coining lexicons. He also discusses some of the problems that language academies encounter such as the lack of uniformity and standardization of the coined lexicon, the existence of several linguistic centers in the Arab counties, the existence of a gap between what is produced by these academies and what is actually used by the public, and the very low degree of acceptance of the coined terms by the society.

Since 1950 Arabicization in Morocco was studied by Sirles (1985). At the end of the study he suggested a model for evaluating language planning and further indicated that language planning evaluation procedure was in fact an interdisciplinary task, and should, therefore, include both linguistic as well as non-linguistic considerations. The author also pointed out that the major pitfall to the success of language planning lied in conflicts in the educational planning goal. He explained that economic

The Arabicization of Medical Terms

cooperation with France and the influential educated elite favored the presence of French in the country.

Khalifeh (1987) calls for Arabicization by making Arabic the language of education in all levels and the language of the scientific research and modern technology in the Arab world. He also calls for going beyond expressing different knowledge and sciences in Arabic by making them take root in the Arabic thought, environment and society. Mutaui²(1989) sums up the objectives of Arabicization in the Arab World by emphasizing the unity of Arabic language and its capability to meet the contemporary needs, innovation, enrichment, development, presentation of Arabic as well as making it a universal language to regain our cultural identity and contribute to the world's civilization.

Since 1986 Al-Abed-Haq started supervising and leading investigations of the issues of language planning and Arabicization in Jordan by carrying out field studies. Moreover, Al-Abed AL-Haq (1996) discusses the role of language planning in providing a theoretical framework for Arabicization. Most, if not all studies supervised by Al-Abed AL-Haq investigate the attitudes of the groups of people related to the stud towards Arabicization of terms used in their field of work, especially what is produced by the Academy of Arabic Language in Jordan.

Al-Smadi (1997) investigates the problem of Arabicization of military terms in Jordan accomplished by the Academy of the Arabic Language in Jordan from a language planning perspective. In this study, he examined the attitudes of the Jordanian soldiers toward the Arabicization of military terms. At the end of his study, he concludes that there is a gap between what is produced by the Academy of Arabic Language in Jordan in the field of military terms. Arabicization and what is actually used is that field. Secondly, most soldiers are enthusiastic to use Arabic military terms. Thirdly, most of the soldiers are motivated to

used and learn English more than Arabic. Finally, the proposed terms by the soldiers are more acceptable than those Arabicized by the Academy of Arabic Language.

AL-Oleimat (1998) carried out a study regarding the attitudes towards and awareness of Arabicization among the Jordanian Parliament members. The study indicated that the members of the parliament were in favor of Arabicization as they view that as part of reviving the Arab identity of the nation.

A similar study to this one conducted by Diknash (1998) on nursing terms intended to evaluate the nursing terms produced by the Jordan Academy of Arabic Language. According to the evaluation criterion proposed by Cooper in 1989, the researcher found that there was a gap between what is produced by the academy and what is adopted and used by students. Further, about two thirds of students were enthusiastic to using Arabicized terms while more than three fourths of them were motivated to use English more than Arabic.

AL-Abed AL-Haq (1998:16) describes terminology planning as a decision making process carried out by related authorities to convey the intents and goals in a given field of knowledge. Planned terms can in many cases be altered in several ways such as purification, standardization, or modernization to encourage communication within and between nations. The author adds that planning terminology involves several sequential activities including term choice, policy formulation, elaboration, and finally evaluation.

The poor acceptability of most translated medical terms to students is tackled in a study carried out by Haddad (1997). The researcher theorized that the many new medical terms brought about from the rapid development in the field have no equivalent in Arabic. The author comments on medical terms brought into Arabic by both translation and transliteration. She believes that translated terms are in most cases odd and

The Arabicization of Medical Terms

unfamiliar while transliterated terms, although do not look natural, are more adequate in Arabic medicine books. The author also explains the unfamiliarity of translated terms by the fact that translators rely on Arabic dictionaries and find difficulty in choosing one meaning among many alternatives. She concludes by recommending standardization as a necessity in medical terms translation.

Rababah (1995) discusses the issue of the existence of synonyms in Arabicized medical terms pointing out that the major cause of this phenomenon is absence of standardized and unified Arabic language for medicine. The author also criticizes the role and efforts of Arabic language academies as scattered and unorganized and is limited to production rather than implementation. He stresses the need for coordination and organization among all Arab academies.

Al-Assal (1998) investigates the acceptability of terms in medicine and engineering. This study reveals indicates that the reasoning and recommendations as to those reported above. The study indicates that the problems with scientific translation to Arabic does not mainly lie in the lack of Arabic equivalents, rather in other factors including adoption and implementation in instruction, existence of Arabic synonyms due lack of coordination between relevant authorities in different Arab countries, and the absence of standardized terminology among other factors.

In similar studies conducted on other fields of human activities and knowledge, the terms were collected from numerous different sources. In this study, a widely used textbook of general surgery. A single source was chosen for it is believed that the study would be more consistent and better results may be achieved. Moreover, it is believed that the role of the Academy of Arabic Language is central to the issue of Arabbication in general. Therefore this aspect was magnified in

this study as compared to other research projects. Further, it is noticed that other studies in the field did not touch on the aspect of term planning. In this work, the researcher strongly believes that in addition to language planning, term planning is of prime importance and was under focus since planning a term means planning a language.

It is appropriate at this point to conclude the chapter in light of the previous discussion. One can recognize that there is a serious gap separating the Arabicized terms and what is adopted and implemented in practice. This gap may be partially bridged by having the academies work in close coordination with the target users in a given field. Further, the academies should implement an aggressive promotional plan for their products as means of enhancing the acceptability and usage of the product. In addition, the Arab academies should be given some sort of authority of implementing and adopting the terms produced. Such an authority is best enforced by politicians.

This chapter highlights the methods and procedures used in this study for collecting the type and amount of data deemed necessary to come up with reliable results and conclusions. It describes the population and sample on which the study was made as well as the instrument of data collection.

3.1 *POPULATION*

As the study is concerned with Arabicized medical terms, the population of this study includes experienced specialized physicians who have been working in the field of medicine in Irbid and Amman for more than 20 years. In addition, practitioners of medicine at governmental hospitals in Irbid and Al-Bashir hospital in Amman as well as senior students in the faculty of medicine at Jordan University of Science and Technology (JUST) are also included.

The Arabicization of Medical Terms

3.2 THE SAMPLE

A major effort was exerted so that the sample of the study would consist of a total of 100 individuals in the field of medicine. This sample size was chosen for convenience of calculations, on the one hand, and it is believed to be statistically enough a number for a good sample size on the other. In order to study the influence of relevant parameters of the sample population on the study findings, the sample subjects were divide according to several criteria or variables as shown in Table 2. These variables were included in the investigation carried out in this research.

Table 2. *Descriptive analysis of the sample.*

Variable	Number (frequency)	Percentage (%)
1- Gender		
Male	70	70%
Female	30	30%
Total	100	100%
2- Center of Work		
Private Clinic	19	19%
Hospital	36	36%
University (JUST)	45	45%
Total	100	100%
3- Degree of Specialty	36	36%
Specialized	16	16%
Physician	13	13%
General Practitioner (GP)	35	35%
Resident		
Student		
Total	100	100%

4-Language of Medical Training and Education	72	72%
English	28	28%
Non-English		
Total	100	100%

Table 2 shows that the sample subjects are distributed according to their gender, center of work, degree of specialty, and language of medical education and training. The table also shows that the distribution of the group in the sample under study regarding their gender is 70% males and 30% females; according to center of work the sample is divided as 19% work in private clinics (mainly in surgery). 16% GPs. 13% residents working to become medical specialist and 35% are senior medical students. table 2 also shows that in terms of the language the language in which the respondents got medical education and training. 72% were trained in English and the rest 28% got their medical education in a language other European, including, for example, Russian, Turkish, Italian,...etc., which are destinations many Jordanians used to go to for getting medical education.

3.3.1 *THE QUESTIONNAIRE*

It is strongly believed that reaching a representative sample of the target group is best achieved by a well-designed questionnaire. Consequently, after carrying out a pilot study, the researcher developed a six-page comprehensive questionnaire consisting of five sections. The first section includes five personal variables that entail information about the questionnaire's background as follows: gender, center of work, degree of specialty, and the language of medical training. The second section includes fifty English medical terms and their terms and their Arabicized equivalents as listed by the Academy

The Arabicization of Medical Terms

of Arabic Language in Jordan. These fifty terms are to be evaluated by the physicians, practitioners, and students according to the following five criteria of acceptability assigned by Cooper (1989:61-62):

1- Knowledge: deals with the fact that whether the questionnaire knows the Arabicized term and has heard of it before.

2- Evaluation: refers to the extent to which the Arabicized term is accepted by the questionnaire as a good equivalent of the English term.

3- Usage: deals with the frequency of utilization and use of the Arabicized term by the sample element.

4-Proficiency: expresses the ability to use the term at the right time and place in the right context and with a high degree of accuracy.

5- Adoption: the acceptance and repetitive and consistent usage of the term among other alternatives.

Each criterion of acceptability is examined through a five-point continuum (integer) scale arranged from 1 to 5 where 1 means the least possible (a minimum) and 5 means the most possible (a maximum). The third section (items 1 to 13) of the questionnaire contains thirteen statements regarding the sample subjects attitudes towards the process of Arabicization of medical terms.. the fourth section (items 14 to 33) of the questionnaire contains twenty statements aimed at examining the subjects' evaluation of the work of the Academy of Arabic Language in Jordan in the field of Arabicizing medical terms as well as the Academy's efforts in publishing, marketing and promoting those terms.

The fifth and the last section (items 34 to 3.8) is made up of five questions whose answers are open to the questionnaire's experience, attitudes, and previous encounters. Item 34 measures the questionnaire's previous experience and knowledge of

Arabicized medical terms; items 35 to 38 attempt to get input from the sample subjects regarding recommended methods and means for promoting the use and adoption of Arabicized terms by suggesting specific criteria for the Arabicized term and pinpointing what they cite as reasons for rejecting the Arabicized terms. Finally, the questionnaire's responses given in the questionnaire as a whole.

3.3.2. PROCEDUREES OF DATA COLLECTION

The main purpose of the study is to investigate the extent of acceptability of the Arabicized medical terms conducted by the Academy of Arabic Language in Jordan. The data used to accomplish this purpose were gathered through many steps. Firstly, after applying a pilot study, fifty Arabicized medical terms of problematic nature were randomly selected from the popular surgery book entitled BAILY & LOVE'S SHORT PRACTICE OF SURGERY Arabicized and published by the Academy in 1997. Secondly, a comprehensive questionnaire was developed in which these fifty terms with their listed Arabicized equivalents were included. The researcher, then, added to the questionnaire five variables concerned with the questionnaires background as well as 13 statements concerned with the questionnaires' attitudes. Thirdly, 113 copies were delivered to the groups of the sample by the researcher herself to adequately interact with the sample subjects in completing the questionnaire items to assume adequate responses. Finally, the questionnaire completed copies were gathered and data were analyzed.

3.4 DATA ANALYSIS

The 100 completed copies of the questionnaire were gathered and the relevant data were adequately classified, extracted, and fed into a computer for analysis. The data were processed and analyzed using the statistical package called "SPSS", which is a

The Arabicization of Medical Terms

package designed particularly for social sciences. The package provides many of the familiar standard statistical outputs of importance for data analysis. This includes frequencies (numbers) and percentages utilized in sample distribution according to different criteria; means and standard deviation utilized in judging responses; and ascending and descending orders of variables utilized in ranking procedures. Furthermore, in judging responses, the five-point Likert scale was used in which the low range of means indicated strong objection and vice versa. Also, the one-way ANOVA procedure and Scheffé test were used for indicating significant differences in responses due to a given variable or parameter. Finally, whether there was correlation among variables was decided by the Pearson correlation coefficient.

4.1 This study aims mainly at investigating the extent of acceptability of Arabicized medical terms published by the Academy of Arabic Language in Jordan. Therefore, the researcher will attempt to highlight the influence of several important parameters on the five criteria of acceptability of Arabicized terms mentioned earlier. The parameters considered in this study are gender, center of work, degree of medical specialization, and the language in which the population of the study got their medical education. In addition, the study examines the evaluation of the medical community in Jordan to the efforts and role of the Academy in doing its job in Arabicization of medical terms and in promoting those terms. Furthermore, the researcher looks into physicians' inputs, recommendations and suggesting as to how the process of Arabicization of medical terms may be improved and enhanced as well as those terms be better marketed and made popular.

The results of the study are presented under four major headings as follows:

1. The criteria and the extent of acceptability of Arabicized terms by the medical community.
2. Attitudes of physicians towards the process of Arabicization of medical terms in general.
3. Evaluation of the efforts of the Academy in Arabicizing and promoting Arabicized terms.
4. Understanding of questionnaire and accuracy of responses.

The results and conclusions will be based mainly on the output of the statistical analysis of the data.

4.2 ACCEPTABILITY OF ARABICIZED MEDICAL TERMS

As mentioned in several occasions elsewhere in the text, the acceptability depends on the five criteria listed earlier. In an attempt to come up with an overall index of the acceptability of a given term, the term "extent of acceptability" is introduced and is intended to provide a unified general quantitative measure of the acceptability of a term. The extent of acceptability as used in this test is defined as the overage of the means of responses of the five criteria for that term as came up from the statistical analysis of the data. As a general rule and based on the Likert scale, the higher the overage, the higher is the acceptability and vice versa.

The levels for the five criteria of acceptability of terms in the questionnaire are classified in five ranks, namely, very low, low, moderate, high, and very high. Accordingly and for the sake of consistency, it is decided that the findings related to the extent of acceptability as well as to each acceptability criterion be quantitatively grouped into five discrete levels the same as those in the questionnaire according to the following scale:

The Arabicization of Medical Terms

Level 1: terms with "very low" extent or criterion of acceptability. It includes terms with an average mean in the range of 1.00 to 1.49.

Level 2: terms with "low" extent or criterion of acceptability. It includes terms with an average mean in the range of 1.50 to 2.49.

Level 3: terms with "moderate" extent or criterion of acceptability. It includes terms with an average mean in the range of 2.5 to 3.49.

Level 4: terms with "high" extent or criterion of acceptability. It includes terms with an average mean in the range of 3.5 to 4.49.

Level 5: terms with "very high" extent or criterion of acceptability. It includes terms with an average mean in the range of 4.5 to 5.00.

Table 3 provides a comprehensive summary of the findings related to the five acceptability criteria of the fifty terms along with the relevant statistical output related to those criteria as well as extent of acceptability. This includes the mean of each criterion for each term, the overall mean of each criterion for the 50 terms, as well as the rank of the extent of acceptability in descending order from 1 to 50 according to the average mean as explained above where 1 indicated the highest rank for extent of acceptability and 50 indicates the lowest rank (poorest extent of acceptability).

4.2.2. CRITERIA OF ACCEPTABILITY

In the following discussion, the five criteria will be considered separately.

1- knowledge: the average mean for this criterion for all terms is 1.56. According to our scale above, the criterion falls in the low level region. Thus, it may be inferred that Jordanian physicians are unaware of the Arabicized terms in their field and the

majority did not hear of such terms. Further, a look at the means of the knowledge criterion of individual terms shows that there are no terms in the high or very high levels and 94 % of the terms lie in the low and very low level regions, which reflects unawareness of those terms. Terms as "Dura" (آلام الجافية) and "Oedema" (وذمة) exemplify the fact that only a few Arabicized terms are known.

Table 3. The acceptability of Arabicized medical terms published by the Academy of Arabic Language Jordan.

English Term	Arabic Term	Knldge Mean	Evin Mean	Usage Mean	Prfncy Mean	Adpin Mean	Acpby Mean	Asc'n Order
Dura	آلام الجافية	3.27	2.86	2.47	2.77	2.53	2.78	1
Oedema	وذمة	3.19	2.74	2.41	2.40	2.33	2.60	2
Haemoptysis	نفث الدم	2.68	2.81	2.20	2.29	2.48	2.49	3
Rheumatoid Arthritis	التهاب المفاصل الريثاني	2.36	2.21	2.01	1.94	1.96	2.10	4
Mesentery	مساريق	2.34	2.15	1.73	1.98	1.81	2.00	5
Mucopolysacchride storage disorders	اضطرابات تخزين عديدة السكريد	1.84	2.12	1.70	1.77	1.92	1.87	6
Venepuncture	بزل الوريد	1.98	2.02	1.66	1.85	1.79	1.86	7
Median Nerve	العصب الناصف	1.85	2.11	1.65	1.77	1.89	1.85	8

Friehy Bloccstained putum	قشع رغوي مصبوغ بالدم	2.04	1.93	1.74	1.74	1.69	1.83	9
Petionmyelitis	التهاب سنحائية الذخاع	1.83	1.94	1.63	1.66	1.73	1.76	10
Tracheostomy	فغر الغامي	1.71	1.84	1.62	1.67	1.76	1.72	11
Chronic paronychia	داحس مزمن	1.68	1.88	1.58	1.56	1.66	1.67	12
Slipped upper femoral epiphysis	انزلاق مشاشة عظم الفخذ العلوية	1.55	1.84	1.45	1.57	1.55	1.61	13
Pectus carinatum (pigeon chest)	الصدر الناطح	1.49	1.80	1.28	1.54	1.69	1.59	14
Traumatic	رضحية	1.58	1.71	1.43	1.58	1.54	1.54	15
Acetabulus varus	المشط الأفحج	1.49	1.73	1.38	1.47	1.60	1.54	16
Joint contracture	تقيد مفصلي	1.47	1.75	1.36	1.52	1.51	1.53	17
Macrostasis	الارتقاء	1.45	1.76	1.37	1.50	1.54	1.52	18

Metacarpophalangea	المفاصل المتعرجية السلامية	1.61	1.65	1.36	1.41	1.56	1.52	19
Granulomatous thyroiditis	التهاب الدرقية الحبيبي	1.57	1.69	1.38	1.41	1.58	1.52	20
Neuromuscular blockade	الاحصار العصبي المضلي	1.48	1.71	1.29	1.36	1.55	1.50	21
Cretinism	القدامة	1.49	1.68	1.44	1.48	1.54	1.50	22
Aveoli	أسناخ	1.45	1.62	1.45	1.44	1.43	1.48	23
Blount's disease (infantile tibia)	مرض بلاونت (الطنون الاقحج)	1.48	1.55	1.31	1.43	1.51	1.48	24
Tumours of pleura	أورام الدفنية	1.48	1.57	1.2	1.46	1.49	1.46	25
Haematomata	ذيوم	1.31	1.61	1.34	1.40	1.46	1.40	26
Congenital talipes equinovarus	القعد الفحجي الولادي (حنف القدم)	1.39	1.58	1.36	1.31	1.38	1.40	27

Fracture of the tubercle	كسر حديبة القاربي	1.30	1.43	1.29	1.39	1.45	1.39	28
Fibrous dysplasia	ثفن ليفي	1.27	1.50	1.32	1.34	1.52	1.38	29
The toes	الأبأخس	1.28	1.40	1.32	1.29	1.49	1.36	30
Syndactyly	اريفاق الأبأخس	1.23	1.56	1.27	1.33	1.37	1.36	31
Lateral popliteal nerve	العصب المأبضي الوحشي	1.26	1.48	1.22	1.43	1.32	1.35	32
Granglioneuroma	العصبوم العقدي	1.24	1.52	1.19	1.32	1.44	1.35	33
Cellulitis	التهاب الهلل	1.27	1.58	1.25	1.31	1.37	1.34	34
Epithelialisation	(الانآام نالآلص والتظيرن)	1.26	1.63	1.24	1.21	1.37	1.34	35
Osteoid osteoma	العظموم العظمائي	1.15	1.47	1.20	1.34	1.45	1.33	36
Actinomycosis of the breast	داء الشيعات بالآذي	1.22	1.50	1.18	1.24	1.43	1.32	37
Poor tissue viability	عيشوشة نسآآية سينة	1.28	1.48	1.12	1.26	1.30	1.30	38

Traumatic fat necrosis	التخر الدهني الرضحي	1.23	1.42	1.19	1.25	1.36	1.28	39
Ileotibial tractitis	التهاب السبيل الحرقفي الظنبوني	1.11	1.37	1.20	1.31	1.32	1.26	40
Sural nerve	العصب الربي	1.17	1.33	1.18	1.20	1.33	1.25	41
Fibrinous exudate	جلطة دموية نضجة مصلية	1.17	1.37	1.22	1.26	1.27	1.25	42
Iliohypogastric	العصب الحرقفي الحائي	1.20	1.39	1.19	1.21	1.23	1.25	43
Pulmonary sequestration	التوشط الرئوي	1.20	1.38	1.15	1.15	1.29	1.24	44
Atlanto-occipital dislocation	الخلع الفقري القذالي	1.17	1.39	1.19	1.24	1.25	1.24	45
Squamous metaplasia	حوول حرشفي	1.13	1.30	1.16	1.24	1.31	1.23	46

Torticollis	الصعر العضلي الولادي	1.14	1.35	1.20	1.21	1.31	1.23	47
Pictodermal dysplasia	ثدن اديمي ظاهر	1.11	1.31	1.14	1.19	1.29	1.22	48
Achondroplasia	الودانة	1.11	1.32	1.13	1.19	1.33	1.22	49
Papillary cystadenoma	غذوم كيسبي حليمومي	1.14	1.30	1.13	1.16	1.24	1.19	50
The Average Mean		1.56	1.69	1.42	1.49	1.55	1.54	

The Arabicization of Medical Terms

2- Evaluation: the average of the means of this criterion for the 50 terms is 1.69, which, according to our scale, falls in the low-level region. Therefore, it may be concluded that Jordanian physicians in general are not willing to use or accept the use of Arabicized terms. Also, this low score of the average mean reflects the dissatisfaction of physicians using Arabicized terms in their field of practice. As in the knowledge criterion, 94% of the terms lie in the low and very low level regions and the remaining 6% in the moderate level and none in the high or very high levels.

3- Usage: the overall mean of this criterion for the 50 terms is 1.42, which is the lowest among the five criteria. This figure leads to the general conclusion that the Arabicized terms in medicine are rarely used by physicians, whether it is in communicating among each other or with their assisting staff. As for the means of individual terms, it may be interesting to note that 100% of the terms are in the low and very low level regions. This extreme figure may shed light on the reality in medical practice when it comes to using Arabicized terms despite the linguistic importance of those terms.

4- Proficiency: as shown in Table 3, the overall mean for the 50 terms is 1.49, since the proficiency criterion indicates the ability of accurate use of the Arabicized term in the right context, this particular criterion is a strong function of other criteria such as knowledge and usage. Notice that the overage mean unsurprisingly belongs to the very low level and according to the means of individual terms almost all terms are in the low and very low levels. Clearly, the importance of proficiency in medical practice in particular can not be overemphasized.

5- Adoption: this criterion scored an average mean for all the terms of 1.55, which is the low level region according to the scale introduced above. Moreover, as far as individual terms are concerned, the data in Table 3 show that almost all terms lie in the low and very low levels. These results refer to the fact that physicians do not adopt Arabicized terms. Furthermore, even

when they use one term, it seems that they do not use it persistently or consistently especially when there is more than one Arabicized alternative for that term which is normally the case.

The discussion above shows a general negative conclusion regarding the five criteria of acceptability one of the reasons that explain this outcome is the nature of the selected terms for this study. The terms selected are a random sample of a population of terms characterized as being problematic so chosen in an attempt to make a strong statement regarding the issue of Arabicization of medical terms in general. In addition, each criterion seems to be strongly dependent on all other criteria so that the weakness of one criteria reflects on all others. In statistical terms, it is said that there exists strong correlation among the five criteria, which will be presented in a later section.

4.2.3 EXTENT OF ACCEPTABILITY

Recall that the extent of acceptability of Arabicized medical terms by physicians is the single most important aspect of this study. The data in Table 3 show that the overall level of acceptability of Arabicized medical terms is low as evidenced by the overall average of 1.54 on the 5-point scale. Obviously, this figure is a direct consequence of the ranking of the five criteria and is simply the average of the overall means of these five criteria.

Table 3 reveals that there are no terms with high or very high extent of acceptability. The term of highest extent of acceptability is "Dura" (الأم الجافية) with a score of 2.75 followed by "Oedema" (وذمة) with 2.60, both lie in the moderate level. Table 4 summarizes the findings of this aspect of the study. It suffices to notice that 96% of the terms fall in the low and very low level of acceptability with 56% of all terms are ranked in the very low extent of acceptability.

The Arabicization of Medical Terms

Table 4. distribution of the 50 terms according to extent of acceptability.

Extent of Acceptability	Number of Terms	Percent
Very high	0	0%
High	0	0%
Moderate	2	4%
Low	20	40%
Very low	28	56%
Total	50	100%

4.2.4 Correlation among the Criteria of Acceptability

The statistical procedure called the Student-Newman-Keuls was utilized and run on the data. Table 5 shows a summary of the output in this regard. In Table 5, the symbols A, B, C, D, and E represent the five criteria of acceptability, namely, knowledge evaluation, usage, proficiency, and adoption, respectively. The coefficient irrelevant and has no significance. However, it should be noted that the coefficient must be unity for the correlation between a variable and itself in which case the P-value is meaningless and, therefore, is not computed and replaced by the symbol "--." The most important figure in Table 5 is the P-value which indicates the significance of correlation among variables. Specifically, the correlation between two variables is significant if the P-value is less than or equal to 0.05.

Table 5 Correlation among the five criteria of acceptability

	A Coefficient (P-value)	B Coefficient (P-value)	C Coefficient (P-value)	D Coefficient (P-value)	E Coefficient (P-value)
A Coefficient (P-value)	1.00 (--)	0.7505 (0.000)	0.8587 (0.000)	0.8305 (0.000)	0.6923 (0.000)
B Coefficient (P-value)	0.7505 (0.000)	1.00 (--)	0.7839 (0.000)	.8097 (0.000)	0.9471 (0.000)
C Coefficient (P-value)	0.858 (0.000)	0.7839 (0.000)	1.00 (--)	0.9451 (0.000)	0.7515 (0.000)
D Coefficient (P-value)	0.8305 (0.000)	0.8097 (0.000)	0.9451 (0.000)	1.00 (--)	0.7777 (0.000)
E Coefficient (P-value)	0.6923 (0.000)	0.9471 (0.000)	0.7515 (0.000)	0.7777 (0.000)	1.00 (--)

The Arabicization of Medical Terms

The results in Table 5 show that the P-value for the correlation between any two of the criteria is zero up to three digits to the right of the decimal point. Simply, this implies that all the criteria are highly correlated, which means that a strong positive interrelationship exists amongst the five criteria, that is, anyone of them heavily affects and in\ is affected by all other criteria. In other words, terms with low how scores of knowledge, for instance, with also score low in all other criteria and so on. A look at Table 3 supports this argument. For instance, a comparison between the terms "Dura" and "Torticollis" provides a specific example.

4.2.5 Correlation between Sample Parameters and Acceptability.

The sample parameters as used here refer to the variables that classify the 100 sample subjects according to four variables deemed potentially relevant to the acceptability of Arabicized medical terms by respondents. The four variables selected are gender, place of work, degree of specialty, and language of medical training. A reference to Table 2 at this point is recommended and provided all necessary details as to the distribution of the sample according to these variables.

4.2.5.1 *EXTENT OF ACCEPTABILITY*

It is seen appropriate to start first by investigating the impact of each parameter on the extent of acceptability of Arabicized terms by finding the average of the means of all criteria as was defined earlier. The result is shown in Table 9 where the numbers are the means of the answers of each level of every variable for the 50 terms regarding each acceptability criterion according to the 5-point scale introduced previously. The symbols are used in the same manner as in Table 5.

It may be readily noticed that all answers regarding the extent of acceptability fall in the low and very low levels regardless of parameter. It is also noticed that scores of all variable groups are

in general close with the exception of those associated with JUST (mainly students) who scored the lowest. These findings may find explanation in the fact that Arabicized terms are strange and not accepted by physicians in general regardless of their gender, place of work, medical ranking, and even language of education keeping in mind that those who studied medicine in Arabic among the respondents are quite few. The lack of experience and contact with medical staff in the field in addition to high emphasis on English in teaching may explain the low score of JUST students.

4.2.5.2 CRITERIA OF ACCEPTABILITY

The statistical procedure known as the analysis of variance (ANOVA) is conducted to evaluate the significance of each of the four variables (gender, place of work, degree of specialty, and language) on each of these five criteria of acceptability.

Table 6. Means of criteria and extent of acceptability according to sample parameters.

Parameter	A	B	C	D	E	Extent of Acceptability
Gender						
Male	1.50	1.66	1.41	1.56	1.56	1.52
Female	1.60	1.77	1.42	1.52	1.52	1.56
Place of Work						
Private clinic	1.58	1.67	1.52	1.52	1.57	1.57
Hospital	1.62	1.93	1.54	1.67	1.74	1.70
JUST	1.45	1.51	1.28	1.33	1.39	1.39
Degree of specialty						
Specialist	1.63	1.81	1.63	1.65	1.65	1.67
GP	1.57	1.61	1.50	1.53	1.51	1.54
Resident	1.58	1.97	1.40	1.57	1.84	1.67
Senior student	1.41	1.51	1.17	1.27	1.36	1.34
Language						
English	1.50	1.7	1.35	1.45	1.55	1.51
Not-English	1.61	1.67	1.59	1.60	1.56	1.61

The Arabicization of Medical Terms

In the following discussing, each criterion will be considered separately

1 Knowledge: the results show that statistically significant differences at the 0.05 level exist among physicians only due to their gender ($\alpha = 0.037$). There are no differences due to the other variables. Since this variable has only two levels, it may be specially stated that female physicians (score 80.2/250) possess more knowledge of Arabicized terms than their male colleagues (score 75.20/250).

2- Evaluation: here again, only the gender variable effects statistically significant differences among physicians ($\alpha = 0.6$). Once more, females (score 88.63/250) show more evaluation of Arabicized terms than males (score 82.93/250).

It seems that a clear explanation of the finding that gender induces differences among physicians in terms of their knowledge and evaluation of Arabicized terms needs further investigation. However, the researcher may suggest that Jordanian female physicians in general due to cultural reasons are most probable to get their medical education in Jordan or in an Arab country than in foreign countries. Therefore it is more probable that they get exposed to Arabicized terms than their male colleagues who got their education in many foreign countries.

3-Usage: here only the degree of specialty effects statistically significant differences among physicians ($\alpha = 0.34$). The other three variables leave no differences among physicians when it comes to usage of Arabicized terms. Since the specialty variable has four levels, additional tests must be made to determine specifically these differences. Table 7 shows the result of the one-way ANOVA for the influence of the degree of specialty on usage. The significance of specialty is evident from the value of the F probability.

Table 7. The one way ANPVA for the influence of specialty variable on usage criterion.

Variance Source	DF	Sum of Squares	Mean Squares	F-Ratio	F-Probability
Between Groups	3	9609.26	3203.09	4.3736	0.0062
Within Groups	96	70307.30	732.37		
Total	99	79916.56	3935.46		

In order to determine the differences among the groups of physicians due to different degrees of specialty as to their usage of Arabicized terms, the Student-Newman-Keuls procedure is applied and the result is shown in Table 8.

Table 8. Student-Newman-Keuls procedure for the influence of specialty on the usage criterion.

Degree of specialty	Mean (out of 5)	Specialist	GP	Resident	Student
Specialist	1.63		--	--	*
GP	1.50	--		--	--
Resident	1.40	--	--		--
Student	1.17	*	--	--	

(*) denotes significant difference at the 0.05 level of significance.

The results shown in Table 8 mean that specialists, GPs, and residents use Arabicized terms, however rare, more often and frequent than senior students of medicine. This tend may be due to lack of contact and exposure of JUST students to the pool of physicians in the field as pointed out before. This finding is further supported by a look at the means reported in Table 6 under item C. Moreover, Table 8 indicates that there is no significant difference among physicians who are specialist, GPs, or residents in the frequency of using Arabicized terms.

The Arabicization of Medical Terms

4 Proficiency: the statistical analysis shows that none of the parameters induce significant differences among physicians as to their proficiency in using Arabicized terms at the 0.05 level. This outcome may be due to this criterion and its strong dependence on the other criteria. Consequently, the result is reasonable in light of the low levels of all other criteria of acceptability regardless of parameter.

5- Adoption: no significant differences at the 0.05 level exist among physicians due to any of the four variables as far as the adoption of Arabicized terms is concerned. This has to do partially with the strong correlation existing between all criteria as pointed out for proficiency. Further, it is evident from other works in the field such as that done by Al-Assal (1998) and Haddad (1997) that more than one alternative exist for the same medical term, that is, Arabicized terms are not standardized or unified.

Therefore, even if a term is used by a physician or group of physicians, not the same alternative is consistently used either by the same physician or group of physicians.

4.3 ATTITUDINAL TRENDS TOWARDS ARABICIZED TERMS.

The third section of the questionnaire with its 13 statements is designed to deal exclusively with the attitudes of physicians towards the issue of Arabicization of medical terms published by the Academy. It is seen best to present the results in tabular form with the statements arranged in a descending order according to the mean of answers of the 100 respondents.

The means are given according to a 5-point scale (min+1 to max+5) corresponding to the five alternative answers for each statement in the questionnaire. The scale is such that a mean up to 1.49 implies "highly disagree", in the range of 1.50 to 2.49 "disagree", 2.50 to 3.49 "not sure", 3.50 to 4.46 "agree", and 4.50 to 5.00 "highly agree". Table 9 shows the sample's response to this aspect of the study.

The data in Table 8 show that the general consensus among physicians is that Arabicized medical terms lack the basic criteria that make a good term such as being brief, short, and made up of few common contemporary syllables that directly convey the technical meaning. This outcome is evident in items 1 to 3 and 13 in Table 9. Further, the motivation of Arabicization due to Arabic nationalism is not evident or even weak as items 4 to 7 indicate.

The remaining items Table 9 indicate that physicians are inclined to believe that using Arabicized terms with patients or colleagues inflicts negative attitudes by others. Further, there seems to be weak tendency towards the need to Arabicize medical terms. All in all, then, the medical community in Jordan is not yet prepared to accept and use Arabicized terms under the current conditions.

Later in this chapter, many of the reasons that explain the trends reported above among physicians will be revealed. It will be shown that the reasons include language of education, traditional social attitudes, characteristics of Arabicized terms as published by the Academy, and the way the Academy functions and does its job.

Table 9. Response of sample population regarding the attitudes towards Arabicization.

No	Statement	Mean
1	Many of the Arabicized medical terms need rephrasing and updating	4.17
2	Some Arabicized terms lack the genuine Arabic flavor or touch (not acceptable)	4.05
3	The good Arabicized terms must consist of the fewest words and phrases (brief)	3.71
4	Arabicized terms contribute to the development and advancement of Arabic.	3.35
5	My love and belonging to Arabic is my motivation to accept Arabicized terms.	3.25

The Arabicization of Medical Terms

6	I feel proud when using Arabicized terms.	3.18
7	I work to help promote and develop Arabicized medical terms.	3.13
8	I get criticized by others when using Arabicized medical terms.	3.06
9	I get the respect and appreciation of others when using Arabicized medical terms	2.89
10	I believe that Arabicized terms facilitate communication with patients	2.78
11	i believe there is an urgent need to Arabicize terms in my medical field.	2.69
12	I use Arabicized terms during discussions with colleagues	2.03
13	Arabicized medical terms are accurate, expressive, and appropriate	2.00

To complete the analysis of this aspect, the ANOVA procedure was run on the data to investigate the influence of the sample parameters (gender, place of work, degree of specialty, and language of medical education) on their response to the 13 items in this section. The results show that none of the parameters cause significant differences among the sample population in their response to the items in this section.

This conclusion may be interpreted by stating that the trends reported above are those dominant among physicians regardless of differences due to the parameters above.

4.4 EVALUATION OF THE WORK OF THE JORDANIAN ACADEMY

Section 4 of the questionnaire with its 20 statements is devoted to examine the evaluation of the Jordanian medical community to the efforts and output of the Academy. The results may be summarized and grouped in the following.

1- There is general agreement among physicians that the attributes of the Arabicized medical terms published by the

The Arabicization of Medical Terms

6	I feel proud when using Arabicized terms.	3.18
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Section 4 of the questionnaire with its 20 statements is devoted to examine the evaluation of the Jordanian medical community to the efforts and output of the Academy. The results may be summarized and grouped in the following.

1- There is general agreement among physicians that the attributes of the Arabicized medical terms published by the

Academy of Arabic Language in Jordan do not meet the criteria that make up a good Arabicized term. Such criteria include accuracy, simplicity, clarity, attractiveness (easy to pronounce and understand), updating and use of contemporary words.

2 There is a general agreement among physicians that there is a serious lack of channels of communication and coordination on part of the Academy with relevant bodies involved in the Arabicization process. This may be in the form of consulting with experts in the field of interest to investigate the specific need of the particular field.

3- There is a general agreement among physicians that the academy plays a poor role in the promotion and marketing of its product among the target groups including educational institutions and professionals. Promotion and marketing of Arabicized terms may be enhanced by distributing brochures or even sending out representatives to the field or by utilizing mass media.

4- There is a general agreement among physicians that government support which is believed to enforce the use, individual efforts in the respective field, and unification of Arabicized terms among Arab countries are necessary to promote Arabicized terms in all fields of knowledge.

To complete the analysis of this aspect, the ANOVA procedure was run on the data to investigate the influence of the sample parameters (gender, place of work, degree of specialty, and language of medical education) on their response to the 20 items in this section. The results show that none of the parameters cause significant differences among physicians in their response to the items in this section. This conclusion may be interpreted by stating that the conclusions reported above are those dominant among physicians regardless of differences due to those parameters.

This aspect of the study is concluded by presenting the results of the statistical analysis among at examining the correlation among the five criteria of acceptability, evaluation of

The Arabicization of Medical Terms

Academy work, and the attitudinal aspects of Arabicization of medical terms. The analysis shows that there is a highly significant positive between all the five criteria of acceptability as well as the attitudinal aspects of the study on the one hand and the evaluation of the work of the Academy on the other. The P-value in all cases is zero up to three digits to the right of the decimal point.

This outcome can be only logical for high ratings of acceptability criteria and positive attitudes towards Arabicized terms lead to high appreciation of the Academy work and vice versa, which is the case here.

4.5 UNDERSTANDING OF THE QUESTIONNAIRE

In order to validate the outcome of the study, and reliability and accuracy of conclusions based on the questionnaire, two questions (items 39 and 40) are included at the end of the questionnaire. The questions are "Did you understand the questionnaire?" and "Was your response accurate?" The responses of the questionnaires to the first question are shown in Table 10. Table 11 includes the responses of sample population to the extent of accuracy in which they answered all the items in the questionnaire (the second question). Tables 10 and 11 indicate that the vast majority of respondents took their time to understand the items in the questionnaire and answer them to the best of their knowledge, implying valid results.

Table 10. Level of questionnaire understandability by respondents.

Understandability level	Number	Percentage
Very high	12	12%
High	50	50%
Moderate	36	36%
low	2	2%
Very low	--	--
Total	100	100%

Table 11. Level of accuracy of answering questions by the respondents.

Accuracy level	Number	Percentage
Very high	7	7%
High	67	67%
Moderate	26	26%
Low	--	--
Very low	--	--
Total	100	100%

5.1 CONCLUSIONS

By the end of this study, the researcher has come up with the following: First, conclusions concerning the five criteria of acceptability may be briefly listed as below:

1- The vast majority of surgeons are generally unaware of Arabicized terms in their field and in many cases have never heard of them.

2- Most physicians are not willing to use or even accept the use of Arabicized terms, It may be said that even those terms that sound familiar are rarely used.

3- There is some sort of confusion among physicians due to the existence of more than one Arabicized alternative for the same foreign term.

4- The five criteria are highly interrelated, that is, the rating of one affects and is affected by all others in a proportional manner.

5- These conclusions seem to be those dominant among physicians as evidenced by the fact that generally none of the parameters caused significant differences among them in relation to these five criteria.

Second, conclusions regarding the extent of acceptability of Arabicized terms by physicians may be listed as below:

The Arabization of Medical Terms

1- As a direct consequence of the conclusions above, the overall response of the sample shows that Arabicized medical terms are poorly accepted by physicians.

2- In general, none of the parameters considered cause differences among respondents as to their poor acceptability, which means that this is the case for the average Jordanian physician.

Third, conclusions regarding the attitudinal aspects of physicians towards Arabicized medical terms may be summarized in the following:

1- The vast majority of physicians believe that there is no urgent need for Arabicizing medical terms at the current time.

2- The majority of Arabicized terms are viewed by physicians as lacking the attributes that make an acceptable term. Consequently, physicians believe that the Arabization process as a whole a major review.

3- The motivation to Arabicize medical terms due to Arab nationalism seems to be weak among Jordanian physicians.

4- The use of Arabicized terms by a physician seems to create negative attitudes by others (patients and colleagues) towards the user.

Fourth, conclusions, related to the evaluation of how good a job does the Academy do may be listed in the following:

1- The general feel among respondents is that the Academy performs a poor job despite the agreement that its staff and personnel are highly qualified.

2- There is a serious lack of coordination and communication on part of the Academy with specialists and relevant bodies in the medical community.

3- There is a serious lack of attempts of organized publicity and promotion on part of the Academy of published terms to target users.

4- The successful work of the Academy and implementation of its products require the support of political decisions and decision makers.

5.2 *RECOMMENDATIONS*

As the end of this study, the following recommendations may be made :

1- In light of the overall poor acceptability of Arabicized terms, the current mechanism of Arabicization should be thoroughly reviewed and, if necessary replaced by a new more efficient.

2- The Arabicization of medical terms should be conducted with close coordination and consulting with qualified representatives from the medical community.

3- The Academy should have a plan of action for publicity and promotion of Arabicized terms to the target groups in their colleges, places of work, and by convening workshops, short courses, brochures, ...etc.

4- The unification and standardization of Arabicized terms among physicians and throughout the Arab world help improve the acceptability

5- Political decisions would help enforce the use of Arabicized terms especially in public medical institutions and hospitals.

6- Physicians should be motivated and encouraged to use Arabicized terms. This should be accompanied with developing positive attitudes among physicians as well as public towards using Arabicized terms.

7- Highly accepted terms, however few, should be put under scrutiny to enforce the positive aspects in them and attempt to emphasize and generalize such aspects. Similarly, negative aspects in very poorly accepted terms should be avoided.

8- The academy of Arabic Language in Jordan should take into account the guidelines of term acceptability proposed in term planning in order to bridge the gap between what is produced and what is actually used.

The Arabicization of Medical Terms

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