

Dental education in the Arabic language vs English language: A survey among Arab dentists

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ABSTRACT

Objective: The aim of this study was to explore the language difficulties encountered by Arabic dental students and dentists in some aspects of their dental education and to determine their attitude towards the Arabization of the medical curriculum. **Materials and Methods:** A web-based self-administered questionnaire with 14 multiple-choice questions was designed and distributed online via google forms in the Arabic language. The online link was sent randomly to Arabic dental students, dental academic staff, and dental practitioners. The survey questions explored language problems during reading, attending lectures and scientific conferences, preparing scientific researches, taking deferent exams, and the attitudes towards Arabization. Descriptive statistics and Chi-square tests were used to analyze the responses to the questions. **Results:** There were 378 respondents for this study. Nevertheless, paying high attention to the importance of English language as the global language of communication, (70.6%) of the respondents believed that studying in Arabic is a basic requirement for the Arabs. Near percentage agreed that mastering their mother tongue is much easier than to acquire another language, which further facilitates studying and improves understanding. More than (65%) of the subjects preferred a mixture of both languages for attending lectures, conferences, and exams. But (68.3%) said that they use English when they search for any subject related to dentistry. **Conclusion:** There has been a consensus on the need for receiving knowledge in the Arabic language, and the importance of studying the mother tongue for enhancing understanding and memorization. The results demonstrated that the idea of teaching some dental courses in Arabic is not impossible and it might be the key to improve dental study for the Arabs. Consequently, a majority stated that there were obstacles in teaching dentistry in fully Arabic language due to the dominance of English language internationally and the weak possibilities of Arabization and translation in the Arab world.

Keywords: Arabization, dentistry, language barriers, mother tongue

Introduction

While there are many factors involved in delivering quality basic education, language is clearly the most important one. It is the key to communicate and understand at all levels.^[1] Arabic is one of the most widely spoken languages in the world, as it is spoken

by more than 467 million people around the world. In addition, non-Arab Muslims are constantly learning it as it is the language of the Holy Quran, and it is essential in prayers and in many Islamic worships and rituals.^[2] It is a great, rich language, capable of absorbing the medical sciences, as proved in the great history of the era of Islamic prosperity. Teaching medicine and dentistry in Arabic in the Arab countries continued until colonialism. After a period of time, it was taught in the colonial language.^[3] While the most developed and European countries such as Sweden, Austria, Norway, Germany, and other countries study medicine in their mother tongues, the Arab countries teach medicine in

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foreign languages, namely, English, French, and Italian except for several colleges, most of them in Syria, which are unique and proud to teach Arabic in all their universities.^[3,4] In most Arabian countries, most schools in Saudi Arabia, Egypt, and Jordan, elementary education is mainly in Arabic and English is taught as a secondary subject. Some students go to universities with good English language background because of their parents' concerns or due to studying at international schools. However, most of the Arabic students have language difficulties when they reach higher education.

The spread of English as a language for higher education teaching in the Arab world has generated a great debate about the advantages and disadvantages of studying in English. Most researches discussed the importance of studying medicine and dentistry in the mother tongue.^[4-8] The use of the mother language in teaching is seen as a way to free learners from the linguistic dualism imposed by thinking in one language and studying in another.^[9] UNESCO (United Nations Educational, Scientific and Cultural Organization) recommended that the national language in the education system is to be used until the maximum possible study stage.^[10] The mother tongue-based bilingual education not only increases the skills but also raises the quality of basic education by facilitating classroom interaction and integration of previous knowledge and experiences with new learning.^[11]

Instructions through a language that learners do not speak have been called "submersion" because it is analogous to holding learners underwater without teaching them how to swim.^[1] Scientific studies have shown that learning a second language, which is different from mother tongue seems more difficult for learners.^[12,13] A verbal working memory, which plays a significant role in language comprehension and problem-solving, was highly proficient in the native language but poorly proficient in the second language. The portion of the brain activated in working memory for the native language is different from the one that is active while using a foreign language^[12] and the activity in the last one is larger and more complex.^[13] Several scientific researchers have confirmed the effect of language barriers in learning and its impact on the educational outcomes of students at the university level and beyond^[14] and they have discussed the problems of studying in English for the Arab medical students.^[9,15-17] One experimental research done in 2017 at the Gulf Arab university in Bahrain found that studying in a native language is very useful for accommodating improvements.^[18] Another study conducted at a Saudi university for the first-year students found that language difficulties ranked as the second obstacle among seven studied obstacles.^[19] It was also found that the percentage of medical terms in medical books is only (3.3%) of the total number of words.^[3] All these scientific facts indicate that for the person learning in his/her mother tongue language is far more efficient. The amount of information held by the learner is greater because of limited memory capacity for the second language, without doubt, these facts become more important while studying medicine and of all its kinds.^[18]

Actually, most of the scientific, technological, and academic information in the world is expressed in English and this confirms the need for teaching medicine and dentistry in this language.^[20] Also, attending international conferences, courses or clerkships abroad needs a good command over the English language to get the whole benefits from it.^[21] There are many factors that make the Arab students utilize the English language during their researches or studies, the most important ones, are the difficulty of communicating with international students as well as their lack of proficiency in Arabic.^[22]

The importance of the Arabization of science in the Arab countries is so clear to anyone since we know that the student cannot often write a full page in English without making grammar or spelling mistakes even after graduation. Also, he/she avoids dialogue and discussion because of his/her language limitations. And because of his/her reading weakness, he/she depends on the summaries only and rarely returns to the references.^[3] However, recently, the weakness of the Arab students' languages has been observed, even in Arabic.^[23] The concept of medical Arabization does not mean abandoning English entirely; the goal is that students learn better in their mother tongue while maintaining a good knowledge of English as the leading language in medical research today, as in Japan, Germany, France, Scandinavia, and some other European countries.^[3,9] Effective doctor-patient communication is essential for delivering quality healthcare.^[24] A gap in clinical communication may develop in countries where the native language is different from the language of medical education.^[17]

One study investigated the association between medical education in a foreign language and students' confidence in their history-taking skills in their native language (Arabic) and they found that the majority of students in Lebanese medical schools (88.5%) were confident in conducting a medical history in their native language despite having their medical education in a foreign language.^[25] In 2005, the Arabization Center for Medical Science (ACMLS), together with the deans of medical schools in the Arab world, argued that learning medicine in Arabic does not hinder doctors from completing their education abroad or from staying up-to-date with medical advances worldwide.^[9] There have been several studies in the Arab world that concluded that science could be taught in Arabic and demonstrated the superiority of Arabic learners to their peers who studied in English.^[3,23] Many Syrian students prove their success and excellence when they go abroad for specialization. Statistics and related studies showed that Syrian graduated dentists continue their studies in the United States successfully and not different from those who had studied medicine in foreign languages in their countries but sure with more time and effort.^[26] Generally, the performance of non-English speakers in CSA (clinical skills Assessment) in USA is far less than the performance of their colleagues who speak English.^[27]

Materials and Methods

The study had been completed in, Riyadh, Saudi Arabia, from May to July 2019. This study utilized a quantitative research

survey. A web-based self-administered questionnaire with 14 multiple-choice questions was used. It was designed online via google forms in the Arabic language. The online link was then distributed randomly on WhatsApp and Facebook to Arabic dental students, dental academic staff, and dental practitioners regardless of age, gender, and nationality. Ethically, each participant was informed of the research objectives before filling out the questionnaire and they requested to determine the study language, country for bachelor of dentistry and the academic level.

The survey questions explored language problems during reading, attending lectures and scientific conferences, preparing scientific researches, taking deferent exams, and the attitudes towards Arabization. Two open-ended questions were used at the end of the survey for more clearance.

The collected data were analyzed using methods of descriptive statistics with (SPSS 25.0 for Windows; SPSS, Inc, Chicago, IL, USA) and Chi-square test at $P = 0.05$.

Results

The respondents of this questionnaire were 378 subjects; 164 (43.4%) were general practitioner dentists, 93 (24.6%) were academic dentists, and 121 (32%) were dental students [Table 1]. As it is shown in [Table 2] about (57.9%) of the participants were studying or had studied dentistry in the Arabic language (mostly in Syria) while (38.1%) of them had studied in the English language in colleges in different countries and only (4%) studied in both languages.

Moreover, (38.6%) were satisfied with the benefits of studying in Arabic and (35.4%) were somewhat convinced, while (25.7%) said they were not convinced at all.

Table 1: Description of the sample

	Item	No.	Percentage
Academic Level	General practitioner dentists	164	43.4
	Academic dentists	93	24.6
	Dental students	121	32
University language	Arabic	219	57.9
	English	144	38.1
	Both languages	15	4
Country	Jordan	6	1.6
	Saudi Arabia	86	22.8
	Sudan	3	0.8
	Iraq	5	1.3
	Yemen	6	1.6
	Syria	236	62.4
	Syria, Saudi Arabia	1	0.3
	Syria, Sudan	1	0.3
	Syria, Cyprus	1	0.3
	Syria, Lebanon	1	0.3
	Palestine	4	1.1
Egypt	28	7.4	

Table 2: Response rates for questionnaire questions

Item	No.	Percentage
1. Are you satisfied with teaching dentistry in Arabic?		
a) Fully convinced	146	38.6
b) Somewhat satisfied	134	35.4
c) Not convinced at all	97	25.7
2. In your opinion, the study of dentistry in English:		
a) A real Obstacle during school years	60	15.9
b) An obstacle in the first year only	157	41.5
c) Not obstacle at all	155	41
3. What language do you prefer to be the language of scientific conferences?		
a) Fully Arabic	42	11.1
b) Fully English	65	17.2
c) A mixture of both languages	270	71.4
4. What language do you prefer to be the language of your college lectures?		
a) Fully Arabic	60	15.9
b) Fully English	68	18
c) A mixture of both languages	249	65.9
5. When you are requested to fill out a scientific questionnaire, you feel it is better and faster for you to have it :		
a) Arabic language	270	71.4
b) English language	107	28.3
6. If you are able to choose the language of your various exams questions, you will choose:		
a) Arabic language	244	64.6
b) English language	133	35.2
7. Do you translate English terms into Arabic during studying for easier understanding and preservation?		
a) Yes	182	48.1
b) No	68	18
c) Maybe	122	32.3
8. If you need to search on Google or YouTube about a specific topic in dentistry you use:		
a) Arabic language	119	31.5
b) English language	258	68.3
9. When reading an English medical journal which providing an Arabic summary for each research, you:		
a) Read the English research only	60	15.9
b) Read the Arabic abstract only	89	23.5
c) Read the research and its summary in both languages to enhance your language skills	228	60.3
10. Studying in English caused an obstacle in dealing with Arab patients, taking a medical history from them and explaining the problem and treatment plan for them.		
a) Yes	155	41
b) No	113	29.9
c) Maybe	109	28.8
11. As an Arabic dentist, your Personal conviction on the subject of teaching dentistry in Arabic:		
a) Dentistry should be studied only in Arabic in Arab countries because it is the mother tongue, with the Arabization of all medical terms and the provision of adequate Arabic books and resources	40	10.6
b) Arabic language is not suitable for studying dentistry at all	61	16.1

Contd...

Table 2: Contd...

Item	No.	Percentage
c) Study dentistry in Arabic is a basic requirement but at the same time English language should pay high attention because it is the language of global communication, so the study should be in both languages effectively	267	70.6
12. Mastering the mother tongue, whatever, makes it easier to acquire another language.		
a) Yes	245	64.8
b) No	42	11.1
c) Maybe	90	23.8
13. Studying in the mother language, whatever, facilitates study and promotes better comprehension and understanding.		
a) Yes	265	70.1
b) No	30	7.9
Maybe	82	21.7
14. Did informing you that the questionnaire is written in Arabic encourages you to open the link?		
a) Yes	210	55.6
b) No	84	22.2
c) Maybe	82	21.7

About 15.9% agreed that English is a real obstacle during the studying years, 41% felt that it never considered a hindrance and 41.5% felt that it is an obstacle in the first year only.

For the language that would be preferred in conferences and external lecturers, the majority (71.4%) agreed that they preferred a mixture of Arabic and English to achieve a better understanding. In addition, (17.2%) preferred the lectures to be fully in English while (11.1%) preferred purely Arabic lectures.

Furthermore, (65.9%) of respondents preferred their academic courses to be in a mixture of both languages, (15.9%) preferred it is fully Arabic, and (18%) preferred to have courses in English.

Regarding the filling of medical questionnaires; (71.4%) of respondents agreed that the process is faster and easier if the questionnaire is written in Arabic while (28.3%) preferred English ones.

For the question: Did informing you that the questionnaire is written in Arabic, encourage you to open the link? — (55.6%) answered yes, (22.2%) said maybe, and (21.7%) said no.

If they have the possibility to choose the exam language; (65.6%) preferred the examination in Arabic while (35.2%) preferred to take English language examinations.

According to the studying and reading methodology; about half of the respondents (48.1%) translated English text into Arabic to understand, (32.3%) confirmed the probability of translation, and only (18%) stated that they do not translate it.

However, for the scientific searching on “YouTube” or “Google” search engine, the percentages were different, nearly (68.3%) stated that they use English when they search for any subject related to dentistry in contrary to (31.5%) who confirmed that they always search in the Arabic language.

Concerning the reading of an English medical article in a journal, which provides an Arabic summary; (60.3%) reported they were interested in reading the research and its summary in both languages to enhance their language skills, (23.5%) confirmed they read the Arabic abstract only while (15.9%) stated they read the English research only.

When asked whether the study in English caused an obstacle in dealing with Arab patients, taking a medical history from them and explaining the problem and treatment plan for them; (41%) believed that the studying in English created a barrier in this point, (29.9%) of them said that it did not affect the communication at all while (28.8%) responded perhaps.

Probably, (70.6%) of the respondents believed that the study in Arabic is a basic requirement but at the same time, the English language should pay high attention because it is the global language of communication, so the study should be in both languages effectively; (10.6%) believed that dentistry should be studied only in Arabic in Arab countries because it is the mother tongue, with the Arabization of all medical terms and the provision of adequate Arabic books and resources; and (16.1%) were of the opinion that the Arabic language is not suitable for studying dentistry at all.

Similarly, (64.8%) of the sample agreed that mastering the mother tongue, whatever, makes it easier to acquire another language; (23.8%) of them said that it may facilitate the acquisition of other languages; while only (11.1%) said it does not affect.

Further, (70.1%) agreed that studying in the mother language, whatever, facilitates study and promotes comprehension and understanding; (21.7%) reported the probability of that; and (7.9%) thought it does not affect.

According to the Chi-square test, there were no significant differences regarding the effect of the country of study on the answers of the questions, except for items number 2, 7, 10, and 14 ($P \geq 0.05$).

Discussion

English has spread as a teaching language in the Arab world in many fields of higher education as well as in dentistry. The researches debated the advantages and disadvantages of studying in English. Most of them discussed the importance of studying medicine and dentistry in their mother tongue.^[4-8] In most of the Arabian countries, elementary education is mainly in Arabic and English is taught as a secondary subject. When they reach

university, most of Arab students have many language difficulties because of studying in full English, and that is the real problem. This study demonstrated Arab dentists' point of view about some of these difficulties and their opinions about Arabization of dentistry. In general, (38.6%) of responders were satisfied with the benefits of the study in Arabic, (35.4%) of responders were partially convinced while (25.7%) of responders were not convinced at all.

Several scientific researches have confirmed the effect of language barriers in learning and its impact on the educational outcomes of students at the university level and beyond^[14] and discussed the problems of the study in English for Arab medical students.^[9,15-17] In our study, (15.9%) agreed that English is a real obstacle during the studying years, (41%) felt that it never considered a hindrance while (41.5%) felt that it is an obstacle in the first year only. Our finding was in agreement with a study conducted by Almoallim *et al.* 2012 among the first-year students in Saudi university that found that language difficulties ranked the second among the seven obstacles studied.^[19] Other studies^[28] had also found that language barriers added new anxieties and worries for health professionals in their dealing with patients with a different language. In a recent study, considering the obstacles in dealing with Arab patients, taking a medical history from them, and explaining the problem and treatment plan for them, (41%) of the respondents believed that studying in English creates a barrier at this point, (29.9%) of them stated that English does not affect at all while (28.8%) reported the probability. These results were in accordance with the conclusion of one such study done by Raad *et al.* 2016 wherein the majority of students in Lebanese medical schools (88.5%) are confident in conducting a medical history in their native language despite having their medical education in a foreign language.^[25] Also, Van Zanten *et al.* 2003 found that good native language is related to good interpersonal skills within the patients.^[27]

Regarding the language that they preferred to be the main language of conferences and external lecturers, the majority (71.4%) agreed that they prefer a mixture of Arabic and English to achieve a better understanding. Also, approximately (65.9%) preferred their university courses and lectures to be given in a mixture of both languages. In addition, (65.6%) of the participants wished to receive the official exams in the Arabic language. Thus, our results showed that (71.4%) of respondents agreed that the process of filling the medical questionnaires is faster and easier if they are written in Arabic. This was confirmed by similar ratio answering the last question in our survey: "Did informing you that the questionnaire is written in Arabic encourage you to open the link?" More than half of the participants answered yes.

In 1994 Al-Sibai *et al.* found that the percentage of medical terms in medical books did not exceed 3.3% of the total number of words and the rest are general terms, and the student studying in Arabic is 43% faster and improves his/her comprehension capacity by 15%.^[3] During studying and reading, about half of our respondents translated English text into Arabic to understand, (32.3%) said

maybe, and only (18%) did not translate it. However, concerning the searching process on YouTube or Google search engine, the percentage was different, the majority of participants (68.3%) stated that they use English when they search for any subject related to dentistry. The reason for this is often the abundance of recent researches, articles, and videos in English while the internet lacks such researches and videos in Arabic language. In reality, most of the scientific, technological, and academic information's in the world are expressed in English.^[20]

However, when asked about reading an English medical journal which provides an Arabic summary for each research, (60.3%) of participants confirmed that they were interested in reading the research and its summary in both languages to enhance their language skills, (23.5%) of participants claimed that they read the Arabic abstract only while the least read the English research only.

Many researches discussed the importance of studying in the mother tongue language.^[4-8] They had shown that learning a second language different from the mother tongue was more difficult for the learner.^[12,13] Mother tongue-based bilingual education not only increases access to skills but also raises the quality of basic education by facilitating classroom interaction and integration of prior knowledge and experiences with new learning.^[11] One experimental research conducted in 2017 at the Gulf Arab university in Bahrain by Taym *et al.*, explored medical students' views of supporting pharmacology self-learning in English by focused materials prepared in Arabic. Most participants reported that this intervention made pharmacology learning easier and more enjoyable and improved confidence in drug selection, knowledge of adverse drug reactions. In general, students found studying in the native language being useful for accommodating improvement.^[18]

All these scientific facts indicated that teaching the person in his/her mother tongue is more efficient. The amount of information held by the learner is greater because of the limited memory capacity for the second language.^[18] As in our study, (64.8%) of our sample agreed that mastering the mother tongue, whatever, makes it easier to acquire another language. A similar percentage (70.1%) agreed that studying in the mother language, whatever, facilitates study and promotes comprehension and understanding.

In summary, (70.6%) of the respondents believed that the study in Arabic is a basic requirement for Arabs but at the same time, the English language should pay high attention because it is the language of global communication, so the study should be in both languages effectively. While the opinion of (16.1%) of our sample was that the Arabic language is not suitable for studying medicine at all.

At the end of the questionnaire, we asked two open-ended questions for further clarification. The first one was: In your opinion, what are the advantages of the study in the mother tongue? The responses focused on the following points:

- Increasing reading speed, shortening translation time, and facilitating understanding, comprehension, and retention of information
- Eases the communication with patients of different cultural levels
- To promote belonging to culture, civilization and Arab history.

The second question asked about the obstacles of the Arabization of dentistry from the point of view of the participant. The answers were summarized in two points:

- The lack of Arabic books and references, the weakness of the translation and Arabization movement, and the lack of support for them.
- The Arab practitioner will not be keeping pace with the developments in dentistry in the world because English is the universal language of science, medical books, and scientific research.

All of these responses and answers were similar to the ones outlined by Salma Othman *et al.* 2012 at Al-Jazira University in Sudan, conducted more than 15 years after the beginning of Arabization. They found the impact of Arabization to be positive as compared to the students who studied in English. At the same time, there have been many obstacles facing Arabization in the faculties of health sciences. The most important ones were the lack of methodological books, the lack of qualifications in the field of Arabization and translation, and the conviction that English is the universal scientific language especially for those who wish to complete their studies outside the Arab countries. Most of the difficulties were related to language rather than the scientific terms, indicating that this problem could be overcome by improving language education at the undergraduate and pre-university levels.^[23]

Conclusion

- Although this study was exploratory, it demonstrated that the idea of teaching some dental courses in Arabic is not impossible and it might be the key to enhance confidence and improving understanding for the Arab students.
- There has been a general consensus on the need for Arabic dental students and the Arab dentists to receive knowledge in the Arabic language, and the importance of studying with the mother tongue in enhancing understanding and the amount of information stored in the memory, whether during study or attending medical conferences.
- At the same time, the majority stated that there were some obstacles in teaching dentistry in Arabic because of:
 - (1) The lack of the available methodological book, the deficiency of Arabic scientific material on the Internet and the shortage of qualifications of professors in the field of Arabization and translation.
 - (2) The dominance of English as an international scientific research language.
- Since the Arabization of dentistry is difficult now, it is necessary to identify and encourage the development of

language skills in both Arabic and English for dental Arab students especially for those whose English language is not adequate. Further studies would help us to explore these points in more detail and could suggest more ideas to apply it.

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Conflicts of interest

There are no conflicts of interest.

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