

**The Opinion of the
Engineering Faculty Members
at the Hashemite University in Zarka, Jordan
on Teaching Engineering Using Arabic Instead of English**

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ABSTRACT

English is used in engineering education in Jordan. It is the opinion of the two authors that Arabic should be used instead of English because it is the native language of Jordan and Arabic has proven itself to be an effective and flexible language. The hypothesis that engineering educators in Jordan share this belief was tested in this study. A sample consisting of engineering educators from various engineering disciplines at a specific and major university in Jordan was chosen and its members were individually interviewed. The response of each engineering educator was recorded. The results of this investigation are detailed and several conclusions are made besides a few recommendations.

THE IMPORTANCE AND VALUE OF THE LANGUAGE

A nation will not be able to function properly without a language¹. The language is the means by which the members of the society communicate with each other. A member in the society uses such a language to state his/her needs and to outline his/ her goals. He/she needs this tool to express his/her opinions and to agree or disagree with the rest of the society. The language is the mirror of its people. Its survival is connected to its people. It is the language that documents the civilization of its people across history. The glory of a society is intertwined with the language it uses. History teaches us that ignoring a language can lead and has lead nations to become distinct. History tells us also that preserving a language lead to the prosperity of its nations¹.

The language has an important role in the life and history of its people, and as put by Dr. Farah Al-Mutlaq¹: "A language is the condensation of the nation itself." In this regard, other scholars² describe the language and its nation as identical twins. The history of a nation including its various lifestyles, ambitions, and suffering is preserved through its language. People will not understand the fabrics of a nation unless they are told so by its own language. The language is the identification of its people¹. The language is a storing device of the accomplishments of its nation.

Al-Hosary² states that nations distinguish themselves primarily by their languages. He also

believes that the survival of a nation is dependent on the survival of its language. Professor Al-Sayyed³ argues that advanced nations have advanced solely because they unified themselves around their languages. Al-Hosary² implies that a nation does not become extinct and obsolete unless it abandons its own language and becomes a follower to the people of another language. It then loses its own identity and it disintegrates into distinction. The above brief introduction is needed to outline the importance of the native language of each nation.

One of the difficult challenges that faces the Arab nations nowadays is in the improper use or lack of using Arabic according to Professor Al-Naqah⁴. He argues that there is an urgent and compelling need to save Arabic. Arabic according to him should be considered a vital tool in scientific advancements. He urges all Arabs to consider it the language of teaching and learning in the curricula at all educational levels.

ARABIC IN THE EDUCATION PROCESS

According to many scholars, ignoring Arabic has led to catastrophic results¹. Arab nations became weak because they did not guard their Arabic language. Other languages, especially English, have slowly replaced Arabic in many ways in many parts of the Arab World. Arabic is becoming a follower rather than a leader as it used to be not a long time ago. The fact that almost all individuals in the Arab World use many foreign terms in their daily lives supports the above arguments. As put by a sarcastic scholar, many Arabs will happily replace all Arab words by foreign if they can, but they do not have sufficient literacy in those foreign languages to do so¹.

Based on their experience and observations, the authors can easily state that the English language has replaced Arabic in the education process in many fields especially those in sciences and technology. Almost all engineering programs in almost all Arab countries with very few exceptions use English instead of the native Arabic language.

Many Arabs including the two authors are alarmed and are not happy with this new phenomenon. It is a genuine fear as many Arabs have started to even think using English instead of Arabic. This will inevitably lead to the undermining of the Arab's native language. It will create communication difficulties between those who use Arabic and those who don't. Many individuals will lose trust in this great language¹. Further, the Arab culture itself may be compromised and its demise might be imminent.

It is the opinion of the two authors that Arabic should be used in the engineering education in the Arab World and especially in Jordan instead of English. One of the authors is a professor in the Department of Arabic Studies at the Hashemite University in Zarka, Jordan while the other is an engineering educator in an English speaking country, the USA. Both are from Jordan. The two authors argue that using Arabic instead of English will lead to great advancements that will benefit not only Jordan and its people but also all humanity across the world as was the case in the past. Many of us are familiar with the great contributions of Arabs in advancing sciences in the past. The fact that advanced nations like the US, United Kingdom, Japan, France, and Germany use their own languages in their education supports this argument.

THE INVESTIGATION AND ITS IMPORTANCE

The two authors believe that many engineering educators in the Arab World will echo their opinion on using Arabic instead of English in engineering education based on their own personal experiences and observations. However, such a statement needs a validation and this hypothesis must be tested. This investigation is on this specific purpose. It is an investigation to gauge the

opinion of Arab engineering educators. For practical reasons, the study was limited in scope to Jordan only. Further, it was limited to those engineering educators at only one university due to various logistical and limitations. The Hashemite University is a state university in Jordan. It is in the city of Zarka, the second largest city in Jordan behind its capital Amman. The university is a co-ed university and it has close to one hundred engineering faculty members in many engineering fields. The Hashemite University was the choice because one of the authors is a faculty member in it albeit the fact that he is not an engineering educator.

THE SAMPLE

The sample of this investigation consists of seven engineering educators. Efforts were made to cover as many engineering fields and academic ranks as possible. Details of these educators are as follows.

1. Mr. Mousa Mohsen

Academic Rank: Professor
Title at the Hashemite University: Dean of Scientific Research and Graduate Studies
Years of Service: 17
Languages: Arabic and English
Engineering Field: Mechanical Engineering
Education: BS: State University of New Buffalo-USA
 Master's: State University of New Buffalo-USA
 Master's: University of Detroit-USA
 Ph. D.: Wayne State University

2. Mr. Mohammad Hiyasat

Academic Rank: Professor
Title at the Hashemite University: Vice President for Administrative Affairs
Years of Service: 13
Languages: Arabic, Russian and English
Engineering Field: Civil Engineering
Education: BS: Moscow Civil Engineering Institute- Soviet Union
 Master's: University of Michigan- USA
 Ph. D.: University of Michigan- USA

3. Mr. Zakariya Al-Gudhah

Academic Rank: Assistant Professor
Title at the Hashemite University: Director of Environmental Studies
Years of Service: 16
Languages: Arabic, and English
Engineering Field: Chemical Engineering
Education: BS: University of Jordan- Jordan
 Master's: University of Sofia - Bulgaria
 Ph. D.: University of Sofia - Bulgaria

4. Mr. Isa Otair

Academic Rank: Assistant Professor

Title at the Hashemite University: Assistant Dean for Students Affairs and Training

Years of Service: 5

Languages: Arabic, German, and English

Engineering Field: Electrical Engineering

Education: BS: Berlin Technical University- Germany

Master's: Berlin Technical University- Germany

Ph. D.: Berlin Technical University- Germany

5. Mr. Shahir Al-Rababaa

Academic Rank: Assistant Professor

Title at the Hashemite University: Chairman of the Department of Architectural Engineering

Years of Service: 4

Languages: Arabic, Reading French, Reading German, and English

Engineering Field: Architectural Engineering

Education: BS: Yarmouk University- Jordan

Master's: Oxford University- United Kingdom

Ph. D.: Oxford University- United Kingdom

6. Mr. Rami Al-Hadaithi

Academic Rank: Associate Professor

Title at the Hashemite University: Assistant Dean for Scientific Research

Years of Service: 16

Languages: Arabic, and English

Engineering Field: Industrial Engineering

Education: BS: University of Baghdad- Iraq

Master's: University of Cranfield- United Kingdom

Ph. D.: University of Bradford- United Kingdom

7. Mr. Hasan Tantawi

Academic Rank: Associate Professor

Title at the Hashemite University: Assistant Dean for Scientific Research

Years of Service: 22

Languages: Arabic, and English

Engineering Field: Civil Engineering

Education: BS: University of Ein Shams- Egypt

Master's: University of Surrey- United Kingdom

Ph. D.: University of Michigan- USA

THE INTERVIEW

The two authors prepared the survey of this investigation in the personal one-on-one interview format. The interview with each engineering educator revolved about ten specific questions. These questions are listed next.

1. What are the languages that you are fluent in?
2. What is your favorite teaching language?
3. Why do you consider your answer in the question above to be your favorite?
4. What are the difficulties and challenges that you face when you teach engineering courses at

the Hashemite University?

5. How do you overcome such difficulties and how do you face such challenges?
6. What is the relationship between professional engineering work and the language of education?
7. How about the effect of the language of education on job placement at graduation?
8. What is your opinion on using the native language in general in teaching?
9. What is your personal opinion on teaching engineering courses using the Arabic language?
10. Do you have comments on this subject?

The interviews were conducted in the period from December 30th of 2007 to February 6th of 2008. The answers and comments of the sample were recorded for a later analysis.

DISCUSSIONS AND DATA ANALYSIS

Five of seven engineering educators stated that English is their favorite teaching language. They attributed this preference to several factors. As seen from the above list, all of these five educators received their education in English speaking countries. They indeed acknowledged this as a main contributing factor. They also stated that most of the engineering textbooks and important references are written in English. It is extremely rare to find an engineering textbook or reference in Arabic. Additionally, they noted that English is an acceptable international language. The remaining two educators stated that Arabic is their favorite teaching language rather than English. One of these two educators described Arabic as the “mother of all sciences.” They expressed their pride in the Arabic language. It is a source of Arab nationalism and they trust it fully in all fields including engineering and sciences. It is a rich and very flexible language according to them. They believe it is easy to teach engineering in Arabic and they did not have doubts that it is easy to learn engineering in Arabic as well.

When asked about the challenges they face when they teach engineering in English, the educators unanimously agreed that the biggest challenge is the weakness of the engineering students in English. English is a difficult language for most of the students. To overcome this common difficulty, all of them indicated that they use a hybrid language in the classroom. That is, they inject Arabic besides English to explain the concepts they teach. Narrative and explanatory parts are done in Arabic, but English is used for terminology, equations, theories, numbers and questions. Some of the educators use diagrams and pictures to explain some of the concepts and components when English fails to deliver the required topic.

Everyone in the sample agreed that engineering firms and companies prefer to hire engineers who graduate from universities in the West or at least those graduates who are fluent in English regardless of the language used in their education. Some of the educators see the pragmatic necessity for this practice, but the others believe it is nothing more than a stunt used merely for show off purposes. This hurts the Arabic language according to these engineering educators.

With only one exception, all of the educators agreed that the native language is the most effective language in education in general because students understand it fully and instructors can use it freely in their teaching. Further, it is easy to communicate using the native language. Some of these six educators made a condition that English should not be ignored in this regard and students should learn English and use it to augment their engineering education. The only dissenting member stated that a native language should not be used unless it belongs to an industrial nation like the US, UK, China, Germany, and Japan.

All of the seven interviewed engineering educators said it is well acceptable and possible to teach

engineering in Arabic but only under certain conditions. They believe the shortcomings in this regards are in the Arabs and not in the Arabic language. The Arabic language can easily adapt itself to meet the new demands for emerging technologies. It is the duty of those in charge of advancing the language to promote Arabic and find solutions to the problems facing its use in education especially in the engineering fields. Almost all of the interviewed educators believe that there are not enough organizations and centers in the Arab World which are dedicated to the Arabic language. Further, existing organizations and centers are not fulfilling their duties towards the promotion and advancement of the Arabic language. Many of the interviewed educators points to the weakness of the engineering faculty members themselves in the Arabic language. Translating new terms from other languages especially English to the Arabic language proves to be a challenge. Each country tends to translate a new terminology based on its vision and in many cases this translation varies from one Arab country to another. This creates a lot of confusion given the fact that there are more than twenty Arab countries on the map nowadays from Morocco in the west to Iraq in the east and from Yemen in the south to Syria in the north. One of the educators gave the example of “Quality Control” and its three variant translations to the Arabic language in Jordan, Iraq, and Egypt. Several centers were created around the Arab World in the past fifty years solely to update the Arabic language and add to it new emerging terminology. However, these centers are not fulfilling their duties well and Arabs are not cooperative in this regard as well. One of the educators stated strongly that the use of Arabic in engineering education will be ineffective and even counterproductive. According to him, it will lead to backwardness and it will be detrimental to the engineering profession and its progress in the Arab World.

CNCLUSIONS

The following conclusions are inferred from this interview with the engineering faculty members at the Hashemite University in Zarka, Jordan:

1. Most of the engineering educators (five out of seven) prefer English in engineering education in a country where Arabic is the native language.
2. Only few (two out of seven) prefer Arabic in engineering education.
3. Engineering students in this specific part of Jordan are weak in English and this presents a major challenge to the engineering educators who are forced to revert to Arabic for help.
4. Using the native language in general is more effective in education.
5. Arabic can be used in engineering education only under certain conditions. These conditions do not exist currently.
6. The original hypothesis of the two authors which was the believe that all or at least most Arab engineering educators prefer the use of Arabic in teaching engineering is not supported by this investigation as most of them prefer English. However, with more efforts from those in charge of promoting Arabic and if certain conditions are created, most Arab educators may prefer Arabic in engineering education.

RECOMMENDATIONS

The following recommendations are offered:

1. A more comprehensive investigation is needed. This study was only focused on the Hashemite University in Zarka, Jordan. Other studies at other engineering programs in other Jordanian universities are needed.

2. There are more than twenty Arab countries. Similar investigations in these countries besides Jordan are also recommended.
3. It is also recommended to expand the scope of this investigation to include other technical and applied fields like Medicine, Pharmacy, and Sciences.
4. The opinion of the educators is important but the opinion of the students is also equally important in this regard. It is recommended therefore to gauge the opinion of students in the use of Arabic in engineering education.

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