Building Knowledge Societies in the Arab Region:

Arabic Language as a Gateway to Knowledge

Executive Summary

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The quest for knowledge societies and economies is an essential element in all progress and sustainable development discourses. Genuine progress can only be achieved through transition to a knowledge society in all its associated pillars including; high-quality education and training systems; the accumulation of scientific research and technical development products; superior capabilities in information and communication technologies; and enhancement of enabling environments that shape the political, economic and social context to achieve all these components.

Language plays a pivotal role in a knowledge society. It is the incubator of culture, science and knowledge in any society. It is also part of the knowledge system and a prerequisite for achieving it and facilitating the production, transfer, localization and use of this knowledge. The processes of establishing knowledge societies are more effective, and are more extensive when using the mother tongue.

Against this backdrop, the report entitled **"Building Knowledge Societies in the Arab Region: Arabic Language as a Gateway to Knowledge"** investigates the status of the Arabic language in the Arab region, and the nature of the intertwined relations between "the language" and "the pillars of the knowledge society". The ultimate aim of this analytical investigation, is to explore and identify the most effective strategies, methodologies, and opportunities for activating the role of the Arabic language in establishing the aspired knowledge societies and economies.

Methodology and Structure of the Report

This report is divided into two main parts: the first part provides a general overview of the status of knowledge and the Arabic language in the Arab region as a whole; the second part includes national case studies that were prepared in three Arab countries, namely: Saudi Arabia, Egypt and Morocco. The report relies on multiple sources of data, including the field studies on Arabic language and knowledge societies in the above-mentioned countries. It also relies on an analysis of the results and data of a number of relevant international and Arab studies and reports on knowledge societies in the Arab countries.

Interactions between the Arabic language and the processes of establishing knowledge economies and societies
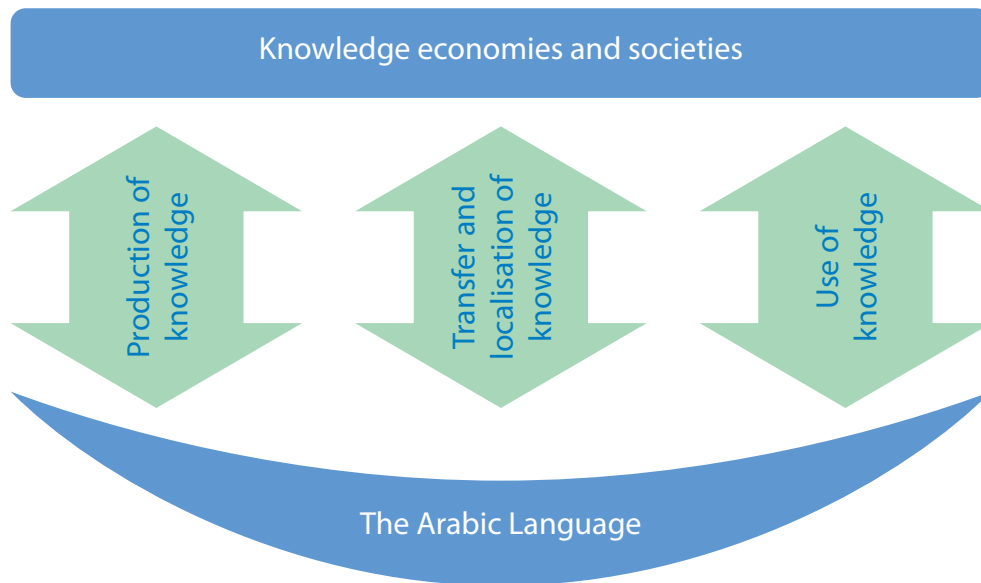
The report is premised on the concept that language is the incubator that nurtures the culture and knowledge of a society. It is through language that knowledge accumulates, ensuring the continuity, development and progress of societies. To develop, a society requires a tool of social communication, to transmit and safeguard heritage over time, to refine knowledge and skills through education, and to build social identity; that tool is language. With the central position it plays in any society, language is present in all discourses addressing change and transition. Indeed, language is a fundamental pillar for transitioning into a knowledge society, as "knowledge" is produced, transmitted, deployed and disseminated through language. Thus, the ability of a language to be open and evolve is tightly related to the openness of the society to the new horizons of knowledge.

Authors of this report argue that Arab societies, like many other societies in developing countries, face significant challenges in addressing the duality of knowledge societies and language.

Globalization has transformed the languages of developed countries that occupy the world's knowledge center (especially English) into dominant languages, relegating many languages used around the world into secondary languages, despite their glorious past. Languages in many developing countries, including Arabic, have become in a status of self-defense, trying to assert their positions compared to other languages. This situation was compounded by the behavior of Arab societies themselves who are abandoning their language for the benefit of other languages, neglecting to teach and learn their native language.

The report shows that the transition to a knowledge society, which Arab countries are still aiming to achieve, requires not only a shift towards the production, localization, and use of knowledge, and the establishment of its basic pillars (namely education, scientific research and innovation, and the development of information and communication technology); but it also requires giving attention to the Arabic language and promoting its role in all pillars and dimensions of the knowledge society.

The Reality and Challenges of the Knowledge Society in the Arab Region

The report reveals that the Arab society is still struggling in the transition to a modern society. It stands at a crossroads between modernity and the preservation of identity. This oscillation is reflected in the Arab society's efforts to transform into a knowledge society and in the status and position of language in this transformation. The Arab society has not yet achieved the progress required to catch up with global knowledge trends; its language remains captive of its past on one hand, and of the challenges posed by dominant international languages on the other.

The report points clearly to the weak status of knowledge in the Arab region and to the gap separating it from the world. It examines several indicators and data available on the subject that confirm this reality. The report also cites a number of previous studies on the state of knowledge in the Arab region, which demonstrate the persistence – and even the widening - of this gap against the major global changes. The report notes the constraints and obstacles facing the acquisition, production and use of knowledge. It emphasizes the importance of building the "critical mass" of youth who shall shoulder the processes of building the knowledge economies and societies and who will also benefit from its fruits. Knowledge, in its broad sense, is understood to include the scientific and cultural stockpiles. In that sense, knowledge production, transfer, localization and deployment become a tool and a purpose for the society in all its components and segments.

The Arabic Language and the Knowledge Society: Discourses and Challenges

The report notes the great cultural presence of the Arabic language in previous eras. The spread of the Arabic language coincided with that of Islam. During this period, the language absorbed philosophy and sciences. Although Arabic is a living, flowing language capable of giving and developing, there are historic and current circumstances that have led to the decline of its cultural and developmental role, especially with regard to the establishment of knowledge societies. The report puts forward the opinion of some researchers who have expressed that the Arabic language has turned into a rigid framework, and that it is captive of its past, a situation that has led to the self-imprisonment of the Arab mind.

The report lists some of the most important problems and challenges facing the Arabic language, including:

- *The dualism in education systems between modernist allegations and the persistence of traditional and patriarchal trends,* which has translated into a linguistic dualism. Some foreign and private schools and universities opt to teach in foreign languages, while public schools and universities adhere to teaching in Arabic language. Some Arab countries have even introduced parallel programs within public universities, which are taught in foreign languages. This has led the Arabic language to become a second language in its home.

- *The separation of knowledge systems between the natural sciences and the social and human sciences.* The natural sciences have become associated to foreign languages (in terms of teaching and publishing), while the social and human sciences are associated to the Arabic language, thus widening the gap between the different sciences.

- *The dualism between classic formal Arabic; and informal (colloquial) languages and dialects.* While such dualism is witnessed in most languages of the world, the stagnation of the classical Arabic language and the contrasting speed of development of colloquial Arabic has widened the gap between the two. The informal language has stormed the world of novel and the media, in particular the press and television.

- *Arabization,* which has three main dimensions. The first dimension is of a cultural and academic nature and relates to the Arabization of the sciences as there is a trend in the Arab countries towards expanding the teaching of the natural sciences in foreign languages, especially English. The second dimension is global in nature, and it is related to the prevalence of "Franco-Arabic", especially among young people, which risks distorting the Arabic language. The third dimension is socio-political manifested in the use of foreign languages, such as French and English, in everyday life.

- *The production and digitization of dictionaries* where efforts in this field remain fragmented and unable to accommodate all the variables surrounding the Arabic language, particularly in relation to the validation of scientific terms and the production of knowledge.

The diversity of language challenges in the Arab sub-regions

The report shows the diversity of challenges, related to the social, historical and cultural contexts,- including ideological and religious beliefs-, within and between the Arab sub- regions.

In the *Maghreb* region, the challenge lies in linguistic diversity, which often transforms into a mosaic, characterized by the coexistence of different linguistic patterns including; contemporary formal pattern; traditional patterns; and a hybrid pattern that is neither traditional nor contemporary, in addition to dialects that vary by the geographic locations. This is in addition to the great impact of the French language - as the language of colonialism-, which creates further turbulence and instability.

In the *Mashreq*, the report shows that the problem still exists but in different shapes and forms. In Egypt, Jordan and Lebanon, for example, colonialism did not seek to erase the Arabic language, but it introduced English or French and made it compete with Arabic, especially in the fields of education and culture. Despite the attention paid to the Arabic language in these countries, the language is caught between colloquialism and the spreading of foreign languages that have become the preferred language of education for many families living in these countries. The spread of foreign based education programs has led the Arabic language to suffer from this problem in many Arab countries.

These challenges are manifested differently in the *Gulf sub-region.* These societies receive large numbers of expatriates, not only from Arab countries but also from all over the world. In some Gulf societies, non-Arab expatriates make up a large proportion of the population, leading to a critical position for the Arabic language. Most studies on the effects of expatriate labor in the Gulf highlight the impact these workers have, especially domestic workers and nannies, on the language of children, and indeed on the Arabic language in general, as the spoken Arabic language becomes a distorted language.

Arabic Language and Knowledge Production in the Arab Region: The Status of Publication

The report shows that the number of scientific journals published in Arabic in Arab countries has significantly increased in recent years. However, most of this increase is in humanities and social sciences, with natural sciences' journals being mostly published in foreign languages. Out of 1,660 Arabic-language journals published in the Arab region, the number of journals specializing in the natural and applied sciences did not exceed 78 journals, or 4.7% of the total number of journals. This creates a significant gap between publishing in Arabic and publishing in foreign languages, and deepens the dualism and division between the natural sciences and the social and human sciences.

Authors of the report emphasize that the digitization of Arabic publications will contribute to the transformation of the Arabic language into a universal language. Electronic publishing in the Arab region began to gradually replace paper publishing, with both methods of publication often adopted jointly.. Electronic publishing has also expanded in the field of electronic journalism, the publication of digital dictionaries, the safeguarding of religious and intellectual heritage, and the preservation of Arabic manuscripts.

Participants in national focus group discussions, undertaken in the context of this report, attributed the low rates of scientific publishing in Arabic to the fact that articles written in Arabic tend to remain local, and do not achieve

Number of journals published in Arabic in some Arab countries by area of specialty
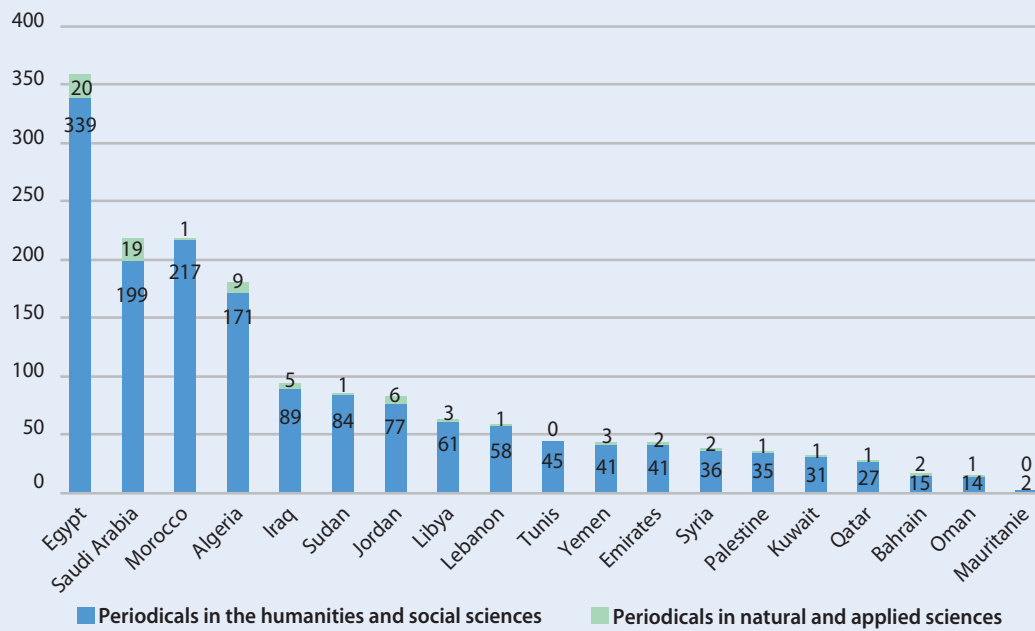
Source: Inventory produced by the authors of this report by reference to the Dar al-Mantumah database (http://mandumah.com/) Accessed on November 20, 2019.

the visibility of those published in the world's dominant languages, such as English and French. They pointed to the pressing need to exhibit a strong determination and self-confidence to use the Arabic language in the fields of science and knowledge, and in university and technical education.

The Arabic Language and the Localization of Knowledge in the Arab Region: The Status of Translation

The report identifies the status of translation in the Arab region and reviews the recent efforts exerted by translation institutions, as well as the projects and awards granted by some Arab countries in order to encourage translation. The provided examples demonstrate that the wave of

translation from foreign languages into Arabic is supported by many parties in the Arab region.

Despite considerable efforts, translation outputs remain below the global level. The UNESCO's «Translation Index» database shows that the number of books translated by the Arab States into Arabic during the period 1979-2010 was very low. The total number of books translated into Arabic by the Arab countries during this period was 11,314 books, constituting about 85% of the total number of books translated into Arabic in the world which amounted to 13,417 books. In comparison, and according to the same source, Turkey translated 11,197 books into Turkish in the same period, and Iran translated 10,633 books into Persian.

Total number of papers published in the Arab countries during the period 1996 - 2018 according to the SCImago Journal & Country Rank database
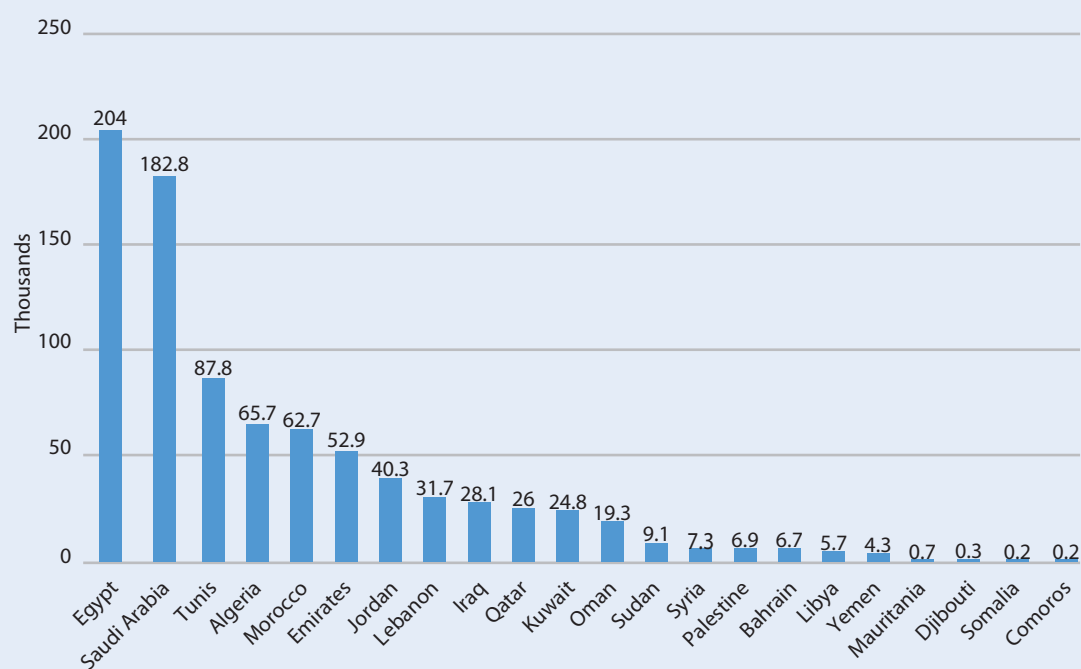
Source: SCImago Journal & Country Rank Database.
https://www.scimagojr.com/countryrank.php?order=itp&ord=desc.
Accessed October 20, 2019

The report also points to persisting challenges that hinders translation in many Arab countries, such as the lack of unified dictionaries, the non-standardization of terms, the shortage of translators, and insufficient resources for training of translators.

The report emphasizes the importance of understanding translation as a link in a chain that begins with the acquisition of knowledge using the mother tongue, and ends with its assimilation into culture passing through the development of the intellectual system and the strengthening of the sense of belonging to an individual and social identity. Translation cannot be the only factor in intellectual and identity building; nevertheless, it is

a factor of development and progress in the field of thought and knowledge. People of the language to which intellectual works are translated must fully understand and absorb what is being translated into their language in order for this knowledge to become incorporated in the context of their intellectual system.

Uses of the Arabic Language in the Economy and Management in the Arab Region

Authors of the report see that there are encouraging initiatives in the Arab region, even in countries that suffer from language dualism, to use the Arabic language in the areas of management,

trade and industry. Supporting legislative frameworks have been developed for this purpose, with most Arab countries having issued laws that emphasize the need to use the Arabic language in official documents issued by the State, in all business areas, and in commercial arbitration practices. However, this approach is still in its beginnings, and it is most evident in the administrative area of government, notably in the provision of government services. Use of the Arabic language in commerce comes in second place, as in attempts to use electronic applications in commercial transactions, the translation of specifications and standards, and e-commerce. Use of the language in the industrial sector comes in third place, as the Arab industry mostly relies on technologies imported from developed societies, and is largely lacking internal resources. In addition, the management systems within large industrial companies rely on foreign languages, especially English, which creates a degree of linguistic conflict within the industrial sector, and forces engineers and administrators to learn foreign languages. Linguistic conflict in industry is also reflected in the daily interactions within industrial institutions where job interviews and training courses, presentations, and evaluation and follow-up reports are conducted in foreign languages.

Arabic Language and the Pillars of the Knowledge Society

Arabic Language and Human Development: Education and Training

The report assures that high-quality education is one of the main pillars of sustainable development. Despite significant efforts to develop educational systems in the Arab region, they still face challenges. Low funding of the educational sector has direct impact on the teaching of Arabic to young people, whether in terms of curriculum development, instructor training or the procurement of educational tools. There is a need to increase financial allocations to education in most Arab countries, and this is more urgent in some countries such as in Sudan, Mauritania, Yemen and Iraq.

Data reveal that most Arab countries suffer from illiteracy with illiteracy rates ranging from 2% to 56%, with an average of around 25% for the Arab region as a whole. The data clearly show that illiteracy is more prevalent among females than males. The data also reveal a significant gap in early childhood education where gross enrolment ratio in early childhood programs exceeded 50% in two Arab countries only, namely Kuwait and Palestine. The severe weakness in preschool enrolment affects the learning of the basic principles of the Arabic language. Another challenge is that most pre-school programs also adopt non-Arabic languages, such as English.

Adult illiteracy rate (% of persons 15 years and older) in some Arab countries (most recent year available)
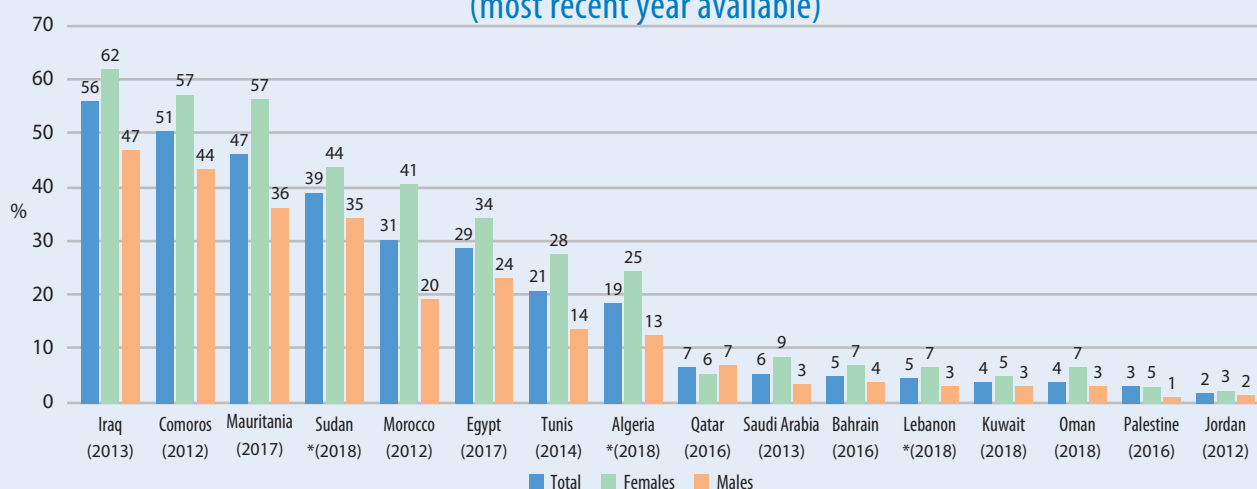
Sources: World Bank database. wdi.worldbank.org. Accessed on October 20, 2019.
* UIS database. http://uis.unesco.org. Accessed on November 26, 2019.

The report presents 2017-2018 data on enrolment rates in primary and secondary education in the Arab countries. Six Arab countries achieved 90% or more in the net enrolment rates in primary education, while rates in the rest of the countries ranged between 60% and 86%. Enrolment rates in secondary education are even lower, exceeding 80% in only five countries. The data also show that the cumulative dropout rate up to the last grade of secondary education during the period 2013- 2018 ranged between 1.6% and 33.5%. The average enrolment in higher education in the Arab region is 32%, with rates in most Arab countries ranging between 5% and 69%.

The report indicates that several Arab countries lack quality standards in primary education as well as in university education. According to the Higher Education Quality Index, eight countries ranked between 75 and 137 from a global list of 137

countries. The low quality of education adversely affects the language used in it. Moreover, the status of the Arabic language in the Arab educational system is still weak in terms of the nature and content of the curriculum, and the number of hours allocated to it in all stages of education.

Expenditure on scientific research and development in some Arab countries for the most recent available year (% of GDP)

	Value
2016 Emirates	0.96
2013 Saudi Arabia	0.82
2014 Libya	0.80
2016 Jordan	0.72
2017 Egypt	0.61
2016 Tunis	0.60
2017 Algeria	0.53
2015 Qatar	0.50
2013 Palestine	0.49
2017 Oman	0.22
2017 Kuwait	0.08
2017 Irak	0.04
2015 Syria	0.01
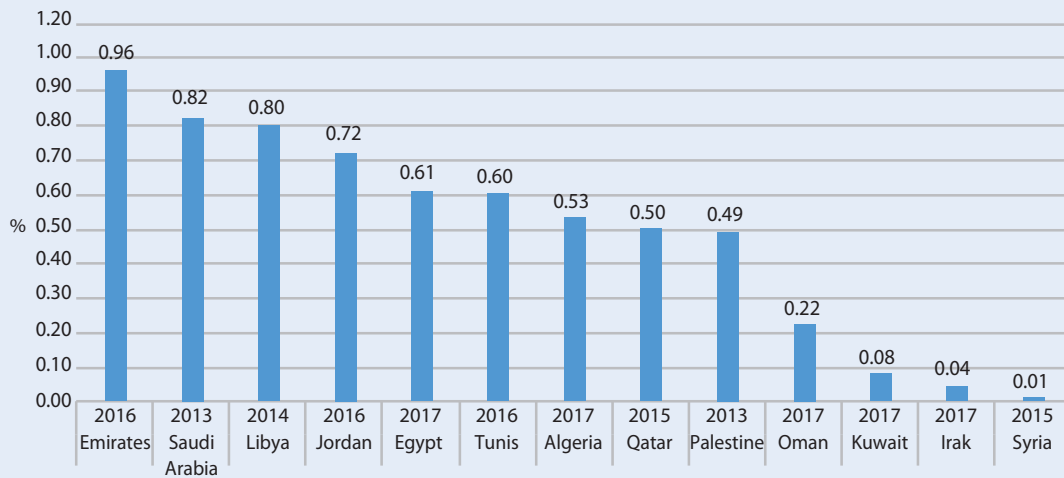
Source: World Bank data. wdi.worldbank.org. Accessed on November 24, 2019.

Scientific Research, Innovation and Development: Language as a Lever for the Establishment of Knowledge Societies in the Arab Region

Despite the fact that scientific research is a fundamental pillar of human knowledge in all fields, the report reveals that there is a huge gap between the calls for establishing knowledge societies and the reality of scientific research and innovation in the Arab region. Scientific research is one of the weakest links in the transition to a knowledge society in the Arab region, as reflected in the following facts:

• Spending on scientific research and development remains insufficient. During the period 2013-2017, expenditure on research and development as a percentage of the gross domestic product ranged between 0.96% in the United Arab Emirates and 0.01% in Syria, and remains, in the best-case scenario, below the global average amounting in 2016 to about 1.68%.

• Arab countries have not yet built the critical mass of human capital working in science and technology. The United Arab Emirates, Tunisia and Morocco topped the Arab countries in terms of researchers and technicians, with more than 1,000 researchers and technicians per million of the population.

• Poor scientific production and publication, with Arab countries combined accounting for less than 1% of the total scientific publishing in the world.

• Arab brain drain continues due to poor internal environments that do not meet the aspirations of highly educated Arab youth. About 50% of physicians, 23% of engineers, and 15% of Arab scientists leave their home countries to live in Europe, the United States and Canada.

Information and Communication Development Index in some Arab countries (2016 – 2017)
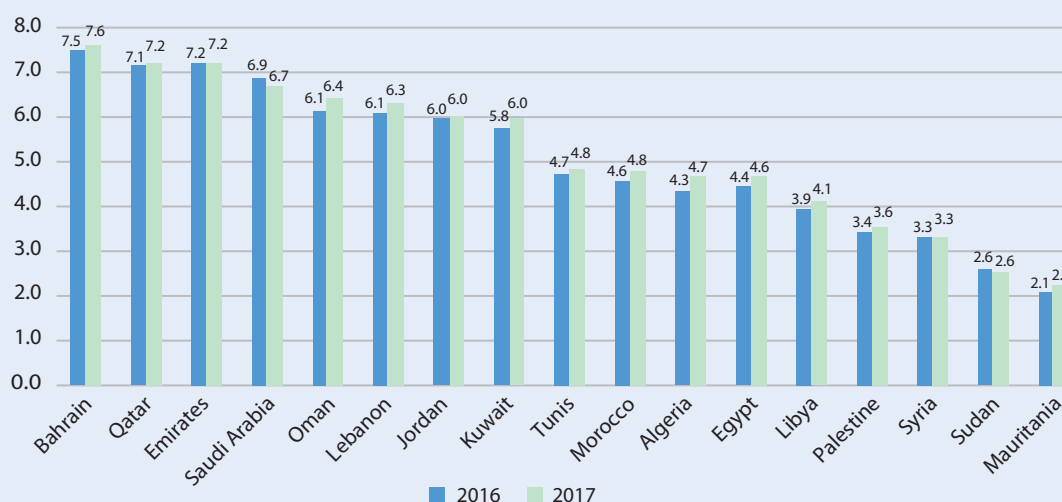
Source: International Telecommunication Union. 2017. Measuring the Information Society Report 2017 - Volume 1.
Note: Value of the index ranges between 1 and 10 (higher value indicates greater progress).

Information and Communication Technology

The report points out that Arab countries have made progress in the field of information and communication technology, especially in the Gulf countries. However, there is a clear disparity among Arab countries in this regard. In 2017, the percentage of individuals using the Internet in Arab countries ranged between 8% and 100%.

Consumer uses of information and communication technologies reveal another challenge for the Arabic language. While the English language accounts for 68% of the digital content globally, the share of the Arabic language is only about 3%. Other challenges include the inaccuracy of some digital Arabic content, the poor design of sites and the lack of attention to aesthetics detracting visitors to these sites. Among the positive aspects are the multiple attempts to publish scientific periodicals electronically, and efforts to establish databases for research published in Arabic.

Media

Significant advances in modern communications technology have provided the media with broad prospects, both in terms of coverage and access to all segments of society, at almost instantaneous speed. The Arab region has a large number of satellite channels reaching 1,122 channels in 2016, including public and private channels. The number of online news portals per million inhabitants in Arab countries ranges from 0.1 to 9.4 portals. However, this development poses a number of threats to the Arabic language in mass communication media, including: the prevalence of grammatical errors in classical Arabic; the prevalence of colloquial language in articles and advertisements, and in

the presentation of television and radio programs; and the frequent use of foreign terminology in programs addressed to an Arabic-speaking audience.

The Enabling Environments

The political will: The report emphasizes the critical importance of political will to foster the enabling environments that will drive towards the establishment of the knowledge societies. The report explains the importance of civil and community action to strengthen the political will and to interact with it as required to mobilize all resources of society and direct them towards the establishment of knowledge societies.

The political will to establish knowledge economies and societies has been clearly declared in the development strategies adopted to enhance economic and social realities and to achieve sustainable human development in many Arab countries. Several Arab countries have developed future strategies that have set the creation of knowledge economies and societies as strategic objectives, as in the strategies of Egypt 2030, UAE 2030, Qatar 2030, Saudi Arabia 2030 and Algeria 2030.

Legislation: The report shows the keenness of Arab countries to protect the Arabic language and confirm its adoption. The constitutions of fifteen Arab countries stipulated in their articles the adoption of Arabic as the official language. Most Arab countries have enacted laws to protect and

promote the use of the Arabic language in various fields, particularly in education and in arbitration. Despite this constitutional and legal momentum, the reality reveals that these laws are not being enforced as required in many cases.

The economic context: The report emphasizes that economic development can support the development of knowledge and technology, and the development of public policies in various fields. Economic development has a major impact on the foundations of knowledge societies, including the enhancement of information and communication technology capabilities, the development of human capacities, especially creativity and innovation; and the development of education in schools and universities.

Generally, Arab economies depend on rentier systems, which are based largely on the revenues of extractive industries, especially oil and gas, and some manufacturing industries and agriculture. Nevertheless, and within publicly stated policies that call for the creation of knowledge economies, there is a general trend in almost all Arab countries towards diversifying the economy, expanding its resources, increasing production and promoting reliance on high value-added goods.

Arab cultural heritage: The authors argue that while Arab society has a profound historical and cultural heritage that spans over time, this heritage has evolved to varying degrees within Arab societies. Despite efforts exerted to develop the cultural system in the Arab world, specialized

reports confirm that the general culture is one of the weakest links in the enabling environments.

Family: The report shows that the acquisition of language within Arab families today faces a number of stress factors, including excessive reliance on communication technologies, the spread of wars and armed conflicts, the prevalence of consumerism, and the excessive reliance on foreign servants and educators in some Arab countries. Some families in Arab society adopt foreign cultures and are keen to educate their children in foreign languages.

The report stresses that the Arab family is required to play an important role by providing an enabling environment that nurtures the Arabic language, and helps young people to acquire values and skills, including linguistic skills, especially the mastery of the mother tongue. This is essential to allow them to contribute effectively to the building of knowledge societies and economies and to allow them to benefit from the products of these societies.

The family is subsequently required to encourage their children to open up to the world, learn foreign languages while inculcating the love of Arabic in their minds. This is the foundation of the knowledge society, which is based on innovation and creativity, both of which can only flourish using the mother tongue.

**Civil society and the public sphere:** The report points out that civil society stands in the mid-point between state institutions and individuals, and plays an important role in the engineering of communicative acts. Hence, civil society is essential in developing the public sphere as an arena of dialogue and debate for the public interest.

Although civil society in the Arab region suffers from many challenges and obstacles, it can play an important role in creating an enabling environment for the knowledge society. For instance, civil society can contribute through local partnership in reinforcing and supporting education, reviewing the quality of the educational process and supporting its modernization. Civil society also plays a key role in productive communication nationally and internationally to support the creation of knowledge societies.

Good governance: The report emphasizes that the enabling environments for building a knowledge society are closely linked to good governance. Any system, program or endeavor to establish knowledge economies is inseparable from the prevailing administrative and governance systems and forms an integral part of such systems. Hence, any reform of governance systems will directly impact the effectiveness of the establishment of knowledge economies and societies and their main pillars, including the governance of education, ICT, innovation and creativity. Given that good governance plays a critical role in framing and guiding the pillars of the knowledge society and the whole development process, the Arabic language can greatly support the social dialogue about this governance, and

The objectives of the Charter of Ethics of Science and Technology in the Arab Region
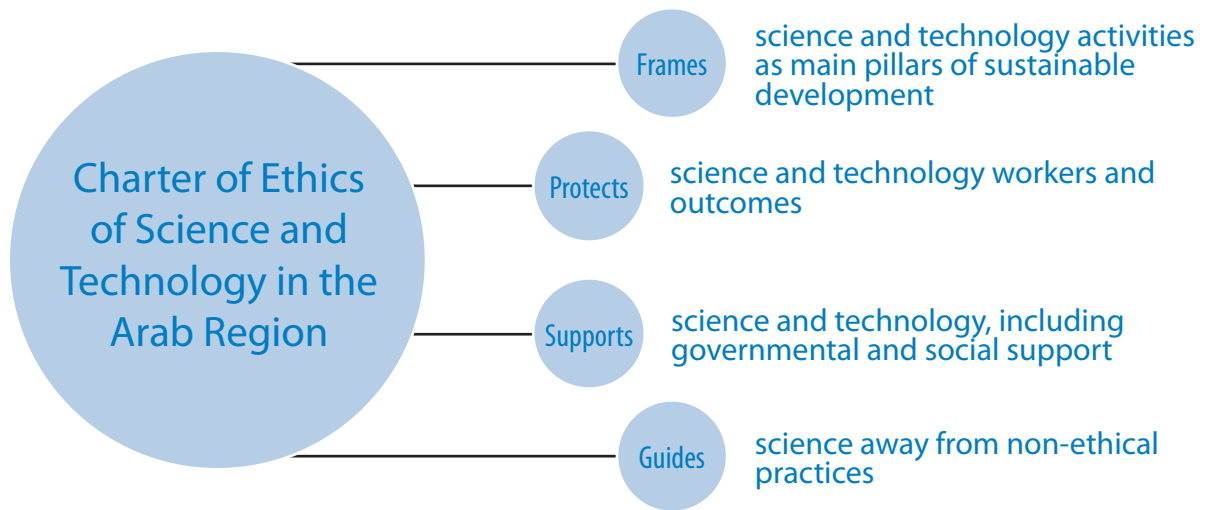
Source: UNESCO. 2019. Charter of Ethics of Science and Technology in the Arab Region.

set its frameworks and orientations in a way that is understandable to all segments of society so as to allow these aspects to be assimilated and absorbed as required, thus translating their orientations and advancing them towards the desired goal.

Competitiveness: The data indicate that some Arab countries, notably the Gulf countries, have achieved a relatively advanced stage in terms of competitiveness, while several other Arab countries are still making extensive efforts in this endeavor. An analysis of the strengths and weaknesses of competitiveness in the Arab region compared to developed countries showed that higher education, training and innovation, technological readiness, and labor market efficiency are the four areas in which the region continues to lag behind.

Ethics of science and technology: The Arab region currently reflects a conscious discourse on the ethics of science and technology as a vehicle for sustainable human development and an environment for the advancement towards the knowledge societies. Under the umbrella of the League of Arab States and with UNESCO's support, the Arab countries adopted in 2019 the Charter of Ethics of Science and Technology in the Arab Region, which constitutes a positive step in this regards. The Charter refers to the issue of publishing in Arabic as an ethical responsibility, within the general framework of making knowledge accessible and promoting its use by all relevant parties.

Recommendations

The report concludes with a number of general recommendations, in addition to time-bound practical recommendations, which are set out below.

General recommendations:

- Adopt a clear linguistic policy by the State, and promote the implementation of constitutional and legislative provisions, as well as the provisions contained in national strategies and charters of educational, cultural and linguistic training, including attention to local languages if any.

- Encourage the efforts made by the Arabic language academies at the level of the Arab world, as well as the academies and centers working in the field of Arabic language to ensure the protection, development and integration of the language in the requirements of the knowledge society.

- Harness efforts to change the societal culture prevailing in some social circles about the difficulty of the Arabic language, its low position among languages, or its inability to express the natural sciences. This requires giving Arabic language a central role in daily discourse in homes, places of worship and public and private institutions. It also requires working to increase the awareness of Arab citizens about their language, its historical and current importance, and linking it to sustainable development programs and strategies in the Arab countries.

- Raise awareness regarding the danger of linguistic dualism on identity, and instilling a culture of pride in Arabic verbally and in writing, both theoretically and practically. This also includes the design of extracurricular activities in schools to instill love for the Arabic language, such as poetry, story and theatre groups; dedicate a school day to speak classical Arabic; encourage

school radio and train children on presentation skills.

- Enhance cooperation and coordination between the efforts exerted in language engineering and computerization, in developing Arabic language communication capabilities, and in organizing its digital content by international companies and local ones, and encourage entrepreneurs in this field.

- Exert efforts at the level of language and information technology, so that Arab institutions can communicate and exchange in Arabic. This is one of the challenges of the near future that needs to be addressed to activate the Arabic language alignment with major international languages as means for transferring information using advanced technologies.

- Make the Arabic language a productive language of science, to assume a leading position among world languages, and prepare it to meet the challenges of globalization.

- Deal with the language as a living organism that can be developed according to the decision of the people of the language; and strengthen the relationship between the process of language development, reform, improvement and renewal on one hand, and the variables experienced by the community on the other. This can help in aligning the language development process with the development of the society.

- Seek to form a scientific and research base, which is the starting point for participation in technical progress, so that the Arab region takes a stronger part in producing technology, not merely consuming it.

- Seek to rid the Arab educational systems of the prevailing dualism, to enable the Arabic language to become the language of education, and subsequently, encourage the proficient learning of foreign languages.
- Promote the enabling environments that stimulate and embrace the establishment of knowledge societies and activate the role of the Arabic language in such societies, while focusing on the pivotal role of good governance at all levels.

Practical recommendations

The report makes a number of practical recommendations that could be implemented by Arab countries individually or through joint Arab action mechanisms. These recommendations are divided according to the three knowledge society processes, namely: knowledge production, knowledge transfer and localization, and knowledge use in the service of sustainable development. Recommendations are also distributed according to a proposed timeframe for their implementation in the short term (three years), medium term (five years) and long term (10 years).
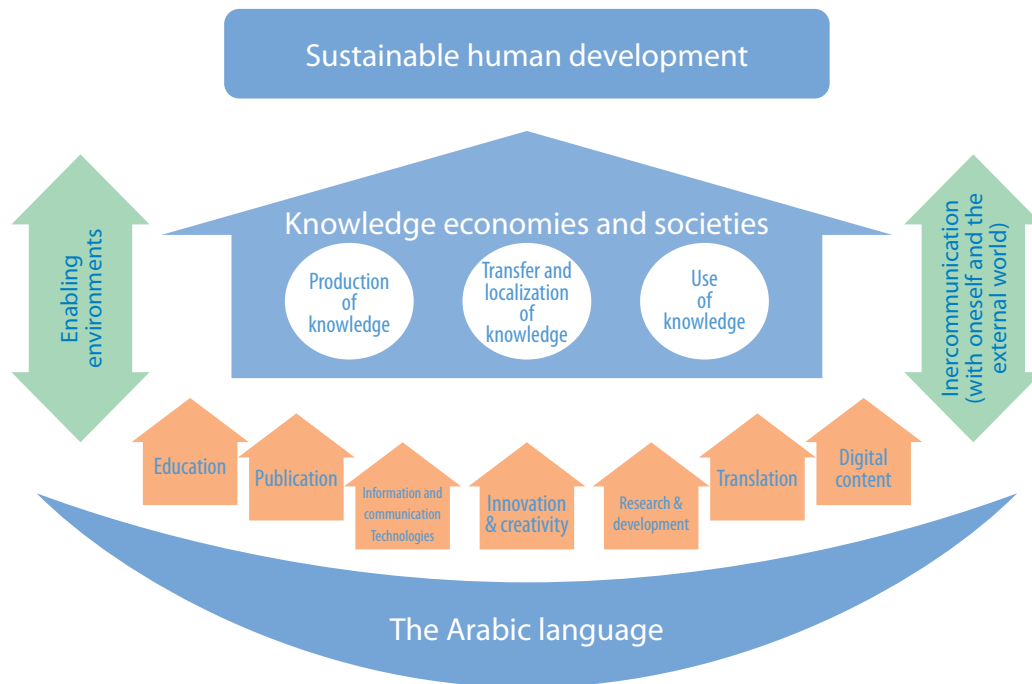
Recommendations related to knowledge production	To be accomplished over the short term (3 years)	To be accomplished over the medium term (5 years)	To be accomplished over the long term (10 years)
Develop a database that includes various studies conducted on the Arabic language (be it a book, research or article), as well as specialists in the study and teaching of Arabic language and their efforts in this area.			
Seek to launch an Arab publishing house concerned with publishing scientific works in Arabic and other languages, so that knowledge products can be transferred from the country level to the global level.			
Establish an Arab patent organization, capable of marketing patents and turning them into products and services.		ongoing	ongoing
Stimulate innovation and creativity in the research and culture areas through the expansion of prizes awarded by Arab countries and organizations.		ongoing	ongoing
Provide radio and television programs via Arab satellite networks to combat the rigid cultural frames that demote innovation and creativity.		ongoing	ongoing
Develop a strategy for the computerization of the Arabic language in cooperation with international information systems corporations.			
Establish an Arabic website to disseminate terminology adopted by Arabic language academies, publish important Arab contributions, and raise the awareness of researchers about these contributions, while also providing innovative and simplified methods of teaching Arabic language to native and non-native speakers.		ongoing	ongoing
Award prizes to researchers in the natural sciences who write their research and invention patents in Arabic language.		ongoing	ongoing

Recommendations related to knowledge transfer and localization	To be accomplished over the short term (3 years)	To be accomplished over the medium term (5 years)	To be accomplished over the long term (10 years)
Review Arabic language curricula in schools and universities at the Arab countries' level to enhance the role of the language in knowledge transfer and localization.			
Work through the Union of Arab Universities to make Arabic language a mandatory course for all scientific disciplines.			ongoing
Produce books to teach Arabic language in an accessible way that meets the needs of learners of all age groups.		ongoing	ongoing
Coordinate between Arab organizations, institutions and centers working in the field of translation particularly in relation to selecting books to be translated.		ongoing	ongoing
Train translators and upgrade their skills.			ongoing
Urge governments to allocate higher budgets for translation from and to Arabic in all disciplines.		ongoing	ongoing
Establish a comprehensive Arabic website to teach Arabic language to native and non-native speakers using modern means.			ongoing
Establish an Arab comprehensive website that provides the terminology adopted by Arabic language academies, makes it available to researchers, and provides global research and studies transferred/translated to and from Arabic.			
Urge ministries of education in Arab countries to expand reading classes and school broadcast programs, and to train students on Arabic presentation and listening skills.		ongoing	ongoing
Urge ministries of education and higher education in Arab countries to require foreign schools and universities operating therein to teach the Arabic language, and to require a high level of Arabic language proficiency to accredit the certificates issued by such schools and universities.		ongoing	ongoing

Develop a unified Arabic glossary that combines the vocabulary of the language in its classical and contemporary forms, so as to include and constantly update most of the terminology related to the knowledge society.			
Establish translation units in universities and research centers to translate the research carried out in these institutions to and from the Arabic language.		ongoing	ongoing
Require local companies to translate imported knowledge into the Arabic language.		ongoing	ongoing

Recommendations related to knowledge use	To be accomplished over the short term (3 years)	To be accomplished over the medium term (5 years)	To be accomplished over the long term (10 years)
Work towards a code of conduct governing the use of the Arabic language in the Arab media, while applying symbolic and material fines to those who misuse or despise it.			
Encourage international companies operating in the Arab region to use the Arabic language in their transactions and training programs, while maintaining other languages.			
Develop an e-commerce strategy that adopts the Arabic language, and motivate Arab countries to pass legislation that establishes confidence in this respect.			
Disseminate successful experiences in the Arab world in the area of e-governance that are based on the Arabic language.		ongoing	ongoing
Work through the League of Arab States and the Arab Labor Organization to issue a code of conduct containing principles and ethics of advertising while preserving the Arabic language.			ongoing
Develop an Arab strategy to expand digital Arabic content and promote its use in cultural and research areas.		ongoing	ongoing

The Arabic language as an incubator for knowledge economies and societies

Sustainable human development

Knowledge economies and societies

Production of knowledge

Transfer and localization of knowledge

Use of knowledge

Enabling environments

Inercommunication (with oneself and the external world)

Education

Publication

Information and communication Technologies

Innovation & creativity

Research & development

Translation

Digital content

The Arabic language

The ethical dimension is a common factor that must take root at all stages of the establishment of knowledge societies, including the production, localization and use of knowledge. Hence, it is essential to adopt and institutionalize the Charter of Ethics of Science and Technology in the Arab Region by turning it into a binding national document in the form deemed appropriate by countries. There is also a need to raise awareness regarding the Charter among all members of the scientific communities, including individuals and institutions that produce knowledge.

In its concluding section, the report underscores the circular relationship between knowledge and language. It also reveals an important structural specificity of the Arab region, manifested in the clear contradiction between the call for establishing knowledge societies and the deteriorating role of the Arabic language compared to other languages. This is aggravated by another contradiction between the strong defense of the Arabic language, and the contrasting deterioration in the teaching conditions, as well as the shrinking role and position of the Arabic language in society in general, and in the educational systems in particular. A knowledge society can only be established in a productive economy; and by a knowledgeable human being, and with a valuable language that maintains resilience and self-development to cope with the rapid changes in the globalization era; and with the self-autonomy that allows for rational governance and management of the development process.

The above figure provides a visual depiction presented in the conclusion of the report on the status of the Arabic language and its role

in interacting with knowledge economies and societies. The language is presented as an incubator that nurtures the pillars of knowledge including education, publication and technology. It is the medium through which knowledge is transmitted and accumulated from one generation to another. It is also the language of research and development that expresses innovation and creativity. It links the pillars of knowledge societies and helps frame and activate them in the production, transfer and localization, and use of such knowledge in various human development activities. All these contexts, whether those related to language or to the knowledge society and its pillars, are made more effective through enabling environments to

advance towards the desired knowledge societies and achieve sustainable human development. The importance of intercommunication and openness is emphasized, firstly with oneself, by dealing with challenges in a transparent manner and seizing the available opportunities; and secondly with the global knowledge and linguistic world, in all its richness that we can draw from and contribute to with our knowledge and in our beautiful Arabic language. It is hoped that the Arab youth will proceed on that path, restoring the appeal of the Arabic language, enhancing its role in incubating culture and science, and building knowledge societies and economies in the service of human well-being and pride in the Arab region.

Saudi Arabia Case Study

The Saudi Arabia case study shows that the Arabic language is an area of focus at three levels: at the governmental level, especially with regard to linguistic policies; at the academic level, including general and higher education; and at the community level, in the media and among various groups in society.

Achievements in these areas, particularly in terms of public policies, are a source of optimism and reflect progress towards enabling the Arabic language. However, there are some barriers that require further support at the governmental level given the direct role it plays in facilitating and accelerating progress towards enabling the Arabic language and in invigorating its desired role; as well as in preserving the linguistic and cultural identity of the society.

The data and analyses presented in this study indicate that a key challenge facing the renaissance of the Arabic language in Saudi Arabia is the gap between linguistic policy and linguistic planning. The study points out that the regulatory framework of the Arabic language is characterized by diversity and multiplicity of issuing parties. However, implementation of these regulations on the ground remains weak. There may be a need to designate an entity (or entities) responsible for planning, follow up and monitoring of the implementation of regulations on the ground. This can contribute to a

further development of the policies, and will enhance complementarity among parties concerned with the issuance and the implementation of language regulations.

The Saudi Arabia case study shows that a key challenge relates to the need to preserve the Arabic linguistic and cultural identity of the society, which has been overtaken by globalization in an era of cultural and technological openness. Arabic linguistic and cultural identity is threatened and is in conflict with other languages and cultures. This raises grave concerns about the impacts on various sectors as the case in education where certain disciplines are being taught in languages other than Arabic; and in employment where mastery of a foreign language is among hiring requirements; and in media, where the use of classical Arabic has been abandoned in many programs; and the in society at large, where the use of other languages is seen as a kind of progress; and even in the family, where children are learning foreign languages in their early age. All these manifestations pose a significant challenge, despite their varying level of vulnerability to this openness. They highlight the need for additional efforts at all levels to preserve the Arabic linguistic and cultural identity of the society and its members, especially the younger generation that has progressively become more attached to technology, and subsequently more open to other cultures.

Egypt Case Study

The Egypt case study shows that Arabic language is an issue of societal concern. This is reflected in the attention paid to it in the political and developmental discourse of the State, and in numerous documents including the Constitution and laws, the strategic vision for sustainable development, and in the National Education Plan which are attempting to make the Arabic the main language for teaching all sciences.

The case study points out that the major challenges facing the Arabic language and its role in establishing the knowledge society in Egypt include the contradiction between the constitutional and legal provisions, and the political, developmental and cultural discourse on the one hand, and realities on the ground, on the other. Manifestations of that are multiple as in education, where an expansion of foreign and private schools that teach natural sciences in other languages is witnessed; and in the media, where the use of a hybrid language that weakens the use of Arabic is also expanding; and even at the family level where we witness the spreading of a culture that favors teaching young people other languages at the expense of the Arabic language, and that considers Arabic language teachers as second class teachers.

In spite of the efforts made to computerize the Arabic language and introduce it to the world of technology, there is still a long way to go as the technological infrastructure is not fully available, and efforts made to Arabize concepts and dictionaries are still in their infancy. In addition, there is a significant shortage of engineering and technical expertise in the field of Arabic language computerization, and incompletion of efforts made by relevant Arab startups.

The case study points out that publications in Arabic are still mainly confined to the social and human sciences, and that there is an unequal distribution of publications between the natural and applied sciences on the one hand, and the social and human sciences on the other. This gap is expected to continue in the future, in light of the policies applied in Egyptian universities that encourage publication in foreign languages, and the inability of scientific publications in Arabic to achieve visibility at the international level.

Despite consensus of experts that the Arabic language can be integrated into creativity and innovation processes, and that it can support the fields of technology and industry, the road to achieve that is still long. This is due to economic dependency in the commercial and industrial fields where use foreign languages in applications and interactions is preferred.

The study also shows that despite the abundance of publication translated into Arabic in the cultural, scientific, artistic and literary fields, the publication rates in Egypt are still below the international rates. The same applies to digital Arabic e-content and to the technological possibilities of using and benefiting from it.

Morocco Case Study

The Morocco case study highlights the predominance of linguistic dualism that characterizes public life in Moroccan society. There is a need for a firm decision to find solutions that enable and accelerate the use of Arabic in all sectors and at all levels, promote its social use, and adopt an effective formula for teaching languages and the languages of teaching in various educational institutions. There is a shortage and almost absence of the Arabic language in scientific and technical institutions and centers and in their publications and knowledge products. This situation requires a thoughtful action and a review of the curricula and methods of teaching and learning of the Arabic language, in line with the trends of contemporary pedagogy.

The case study confirms that human beings do not innovate outside their language. If we are to form a citizen with a Moroccan identity and with global characteristics, one of the most important duties is to Arabize Morocco's educational programs, and to strengthen the teaching and learning of foreign living languages.

The case study shows that current linguistic debates on Arabic language often confuse between objective, scientific issues and ideological issues. Raising the level of the Arabic language and giving it its true value can only be achieved by avoiding ideological attitudes and by considering the consequences of the adopted linguistic choices, the methods of implementing them, the material, economic, educational and political costs. This is to be accompanied with continuous follow up and assessment of the linguistic policy against a set of delivery and accountability standards.

It is imperative that responsible authorities enforce the decisions made by the State and implement the linguistic recommendations forwarded by the Arabic Language academies in order to promote the Arabic language, and to allow it to keep abreast with rising scientific, technical and technological developments.

The case study shows that in recent decades, Morocco has undertaken several initiatives that clearly demonstrate its will to change and develop with many significant success stories and ambitious projects. In many respects, and over the past 15 years, development in Morocco has been distinguished

Remarks

Remarks

Building Knowledge Societies in the Arab Region: Arabic Language as a Gateway to Knowledge