An Overview of Education Development in the Arab Region: Insights and Recommendations Towards Sustainable Development Goals (SDG)
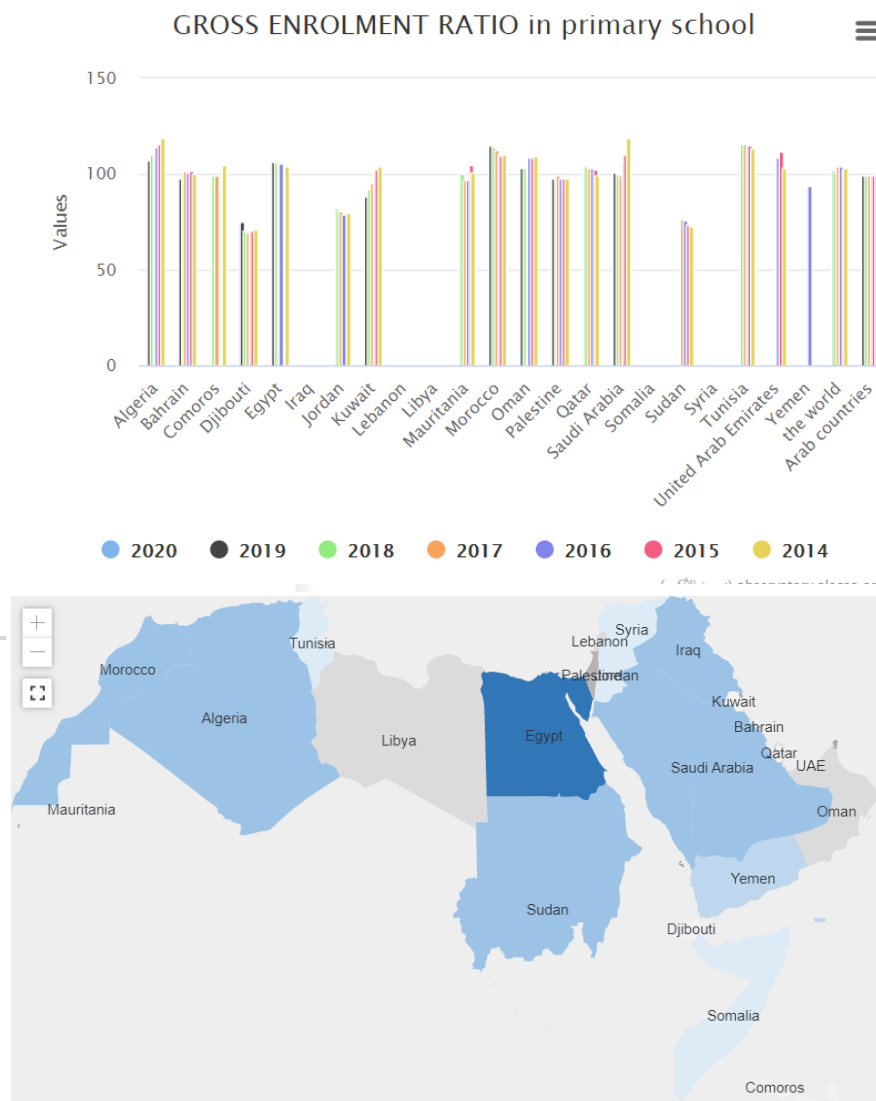
Dr. Ahmed Tlili, Beijing Normal University

Project motivation

- **Open science** is the movement to make scientific research and its dissemination accessible to all levels of an inquiring society, amateur or professional. **Open Interactive Database project** is launched to echo the notion of open science movement to foster open access to information.

- Although many International organizations have been published education report about Arab region as a whole, a comprehensive report about education development with rich statistical details of 22 Arab countries is not available.

- Our report combines open interactive database indicators and **UNESCO SDG4 indicators,** aiming to examine how Arab countries achieving **SGD4 goals**, and provide recommendations to stakeholders.

Interactive database

GROSS ENROLMENT RATIO in primary school

GROSS ENROLMENT RATIO in primary school

● 2020 ● 2019 ● 2018 ● 2017 ● 2016 ● 2015 ● 2014

Observatoire de l'Alecso   Alecso Observatory

⊕ Field of education

⊕ field of culture

⊕ science field

⊕ The field of information technology

⊕ Economic data and indicators

⊕ Demographic data and indicators

Book outline

- Chapter 1 Motivation and background
- Chapter 2 Economy, social development and culture
- Chapter 3 Information Communication and Technology
- Chapter 4 Primary and secondary education
- Chapter 5 Higher education
- Chapter 6 OER policy and initiatives
- Chapter 7 Recommendation

- Access to the book

Economy development: income

Country	Income level	Gross National income (GNI)
Somalia Sudan Syria Yemen	Low-income economies	$1045 or less
Algeria Comoros Djibouti Egypt Mauritania Morocco Tunisia	Lower-middle-income economies	$1046 to $4095
Iraq Jordan Lebanon Libya	Upper-middle-income economies	$4096 to $12695
Bahrain Kuwait Oman Qatar Saudi Arabia United Arab Emirates	High-income economies	$12,696 or more

Economy development: economic structure

Economic structure	Countries
Primary producers (PP)	Comoros, Mauritania, Sudan, Djibouti and Yemen
Diversified economies (DE)	Egypt, Jordan, Morocco, Lebanon, Syria, and Tunisia
Mixed oil producers (MOP)	Algeria, Libya and Iraq
The Gulf Cooperation Council (GCC)	Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates (UAE)

Source: Economic Research Forum (1998).
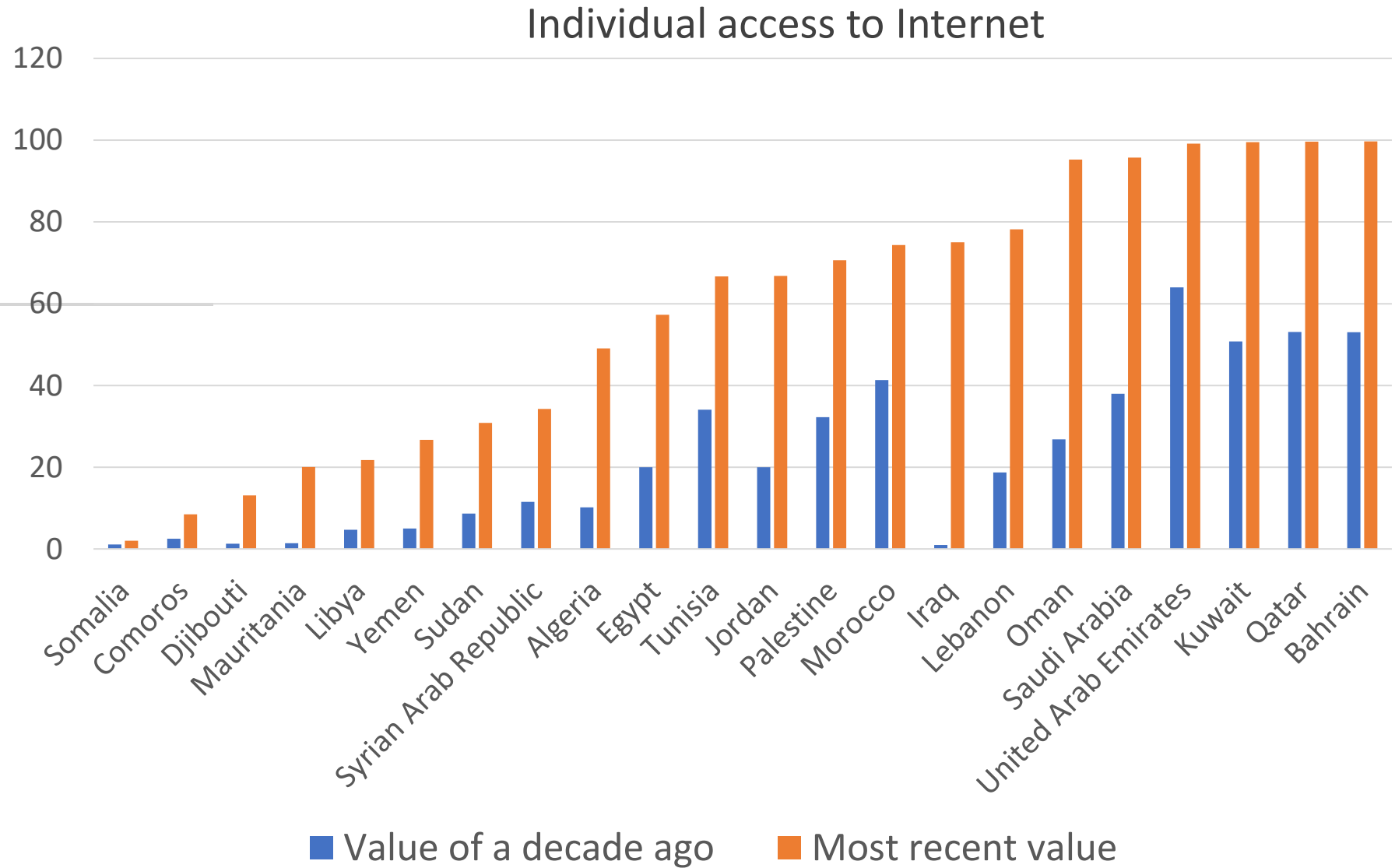
Key finding: network readiness

- **Network readiness index (NRI)** is used as the indicator for measuring the equipment and use of ICT in a country. 134 countries are ranked by their NRI score.

- Result suggests despite individual, business and governments widely utilize ICT for various purpose, lack of trust, inadequate regulation and insufficient inclusion impede effective governance regarding of ICT.

| Network Readiness Index of Arab countries' world ranking	
Quartile	Country
1st quartile	UAE
2nd quartile	Qatar, Saudi Arabia, Bahrain, Oman and Kuwait
3rd quartile	Jordan, Egypt Lebanon, Tunisia and Morocco
4th quartile	Yemen and Algeria

Source: Dutta & Lanvin, 2020

Key finding: ICT devices

- The **ownership of computer** ranges from 4% to 100%

- The **ownership of mobile phone** are above 70% in Arab countries.

- The ownership of computer and mobile phone are low in some Arab countries such as **Iraq, Palestine and Algeria**.

Ownership of mobile phone and computer

Computer — Mobile phone
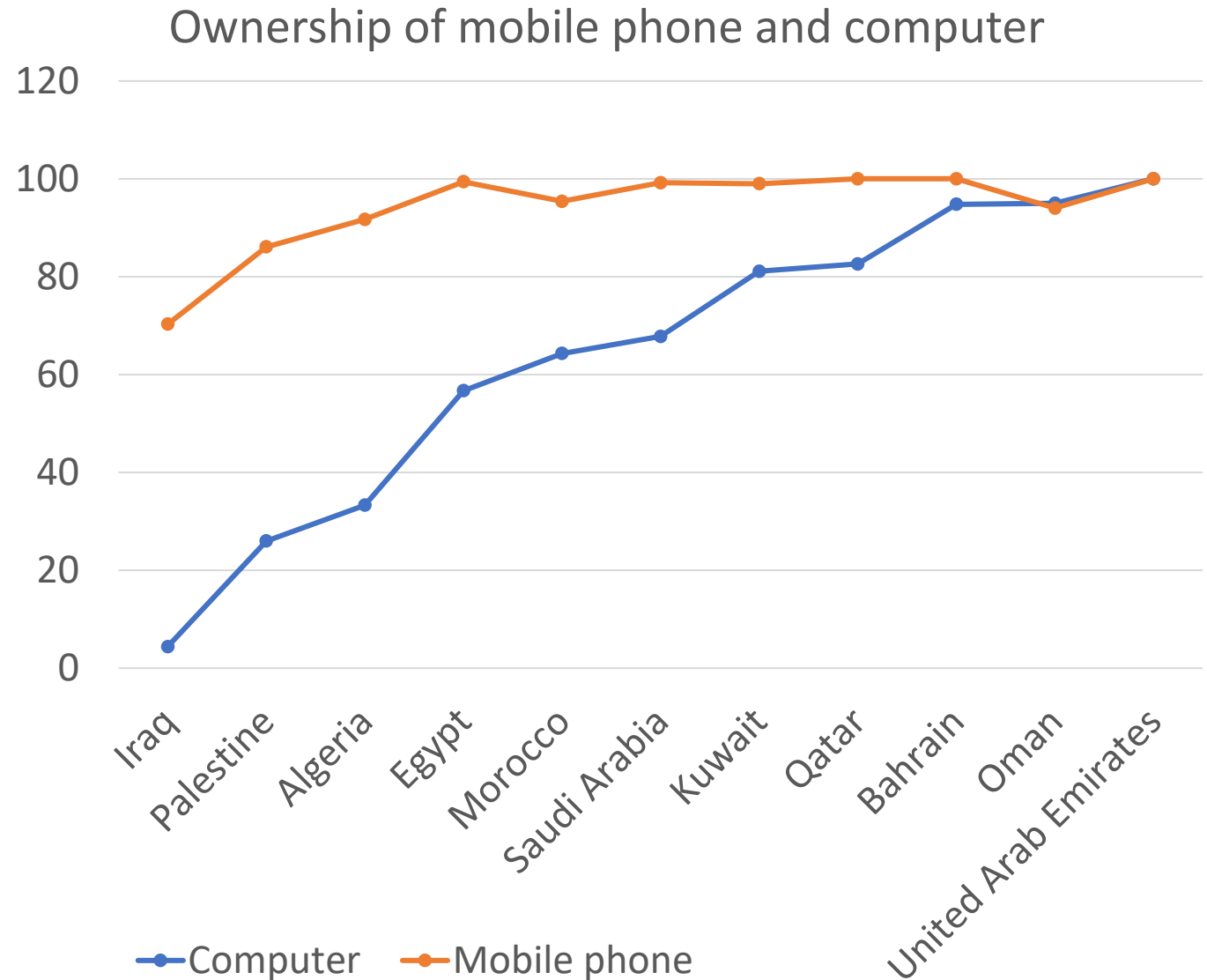
Source: ITU; Year: 2018-2019

Key finding: ICT skills

- ICT skills is evaluated by the extent of active population possess sufficient digital skills such as computer skills, basic coding, digital reading in their countries.

- ICT skills in some Arab countries need to be improved

ICT skills
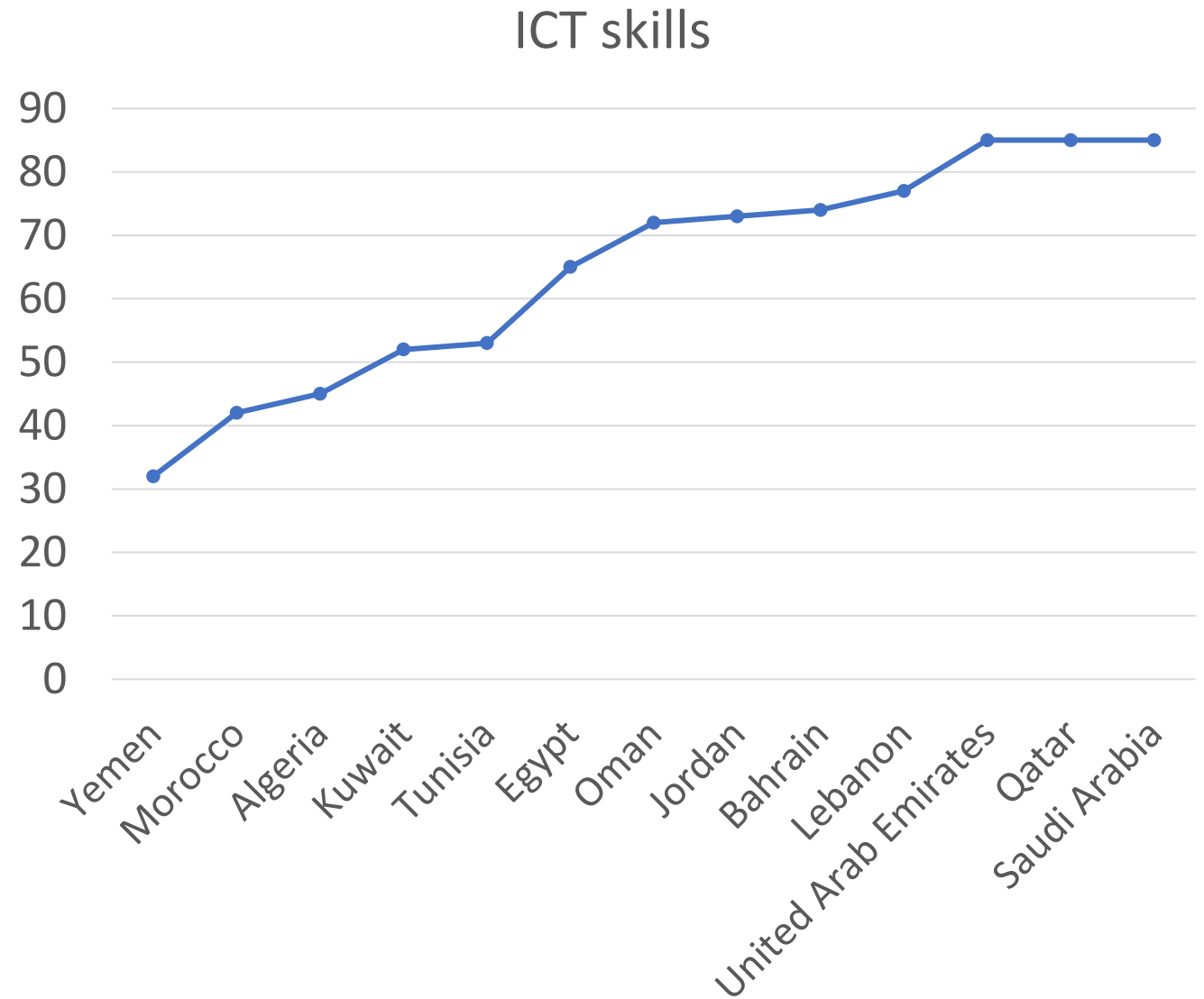

Source: Dutta & Lanvin, 2020

Key finding: ICT access at school

- Generally, the higher levels of education, the better computer and internet access at school.

- **Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE** have achieved **full** computer and internet access at school.

- **Comoros** has low access in both computer and Internet.

Proportion of schools with access to computer%

Primary — Lower secondary — Upper secondary
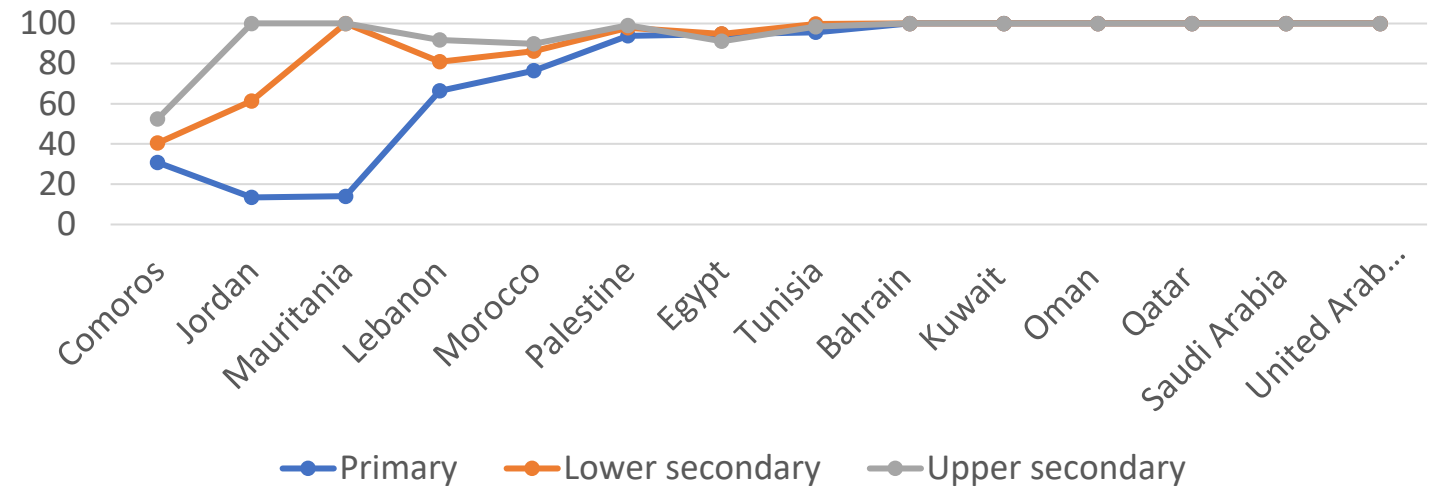
Proportion of schools with access to Internet%

Primary — Lower secondary — Upper secondary
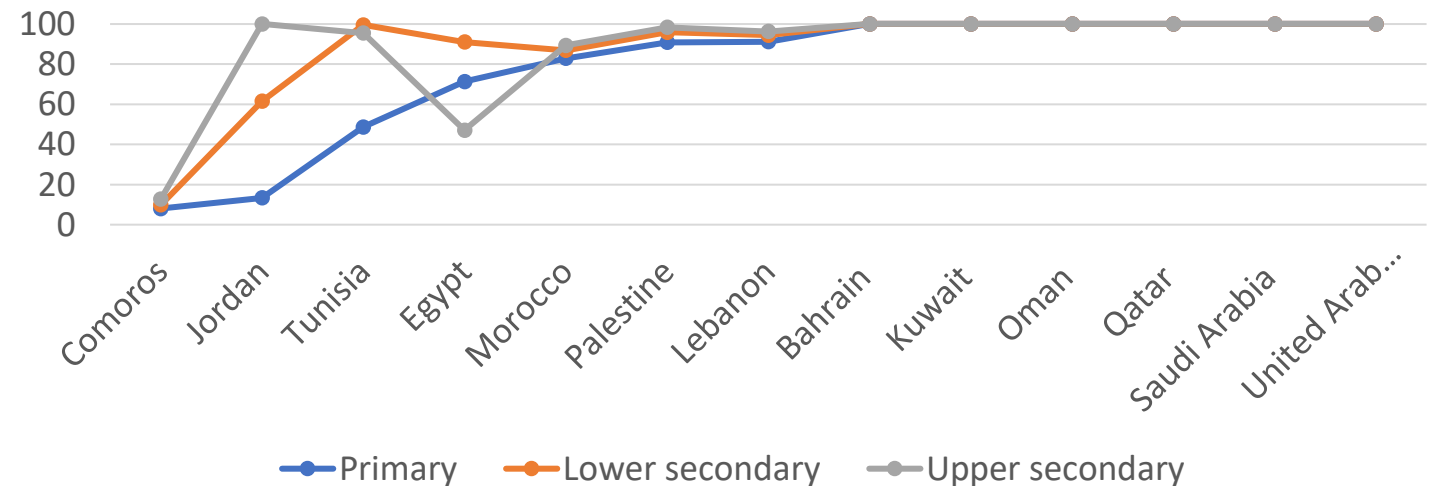
Source: UNESCO; Year: 2017-2019

Key findings: education access

- Using Net Enrollment Ratio (NER) as an indicator, the access of primary and secondary education of Arab countries is below the world average in 2018.

	Primary NER	Secondary NER
Arab world average	85	64
World average	90	66

Source: The World Bank and UNESCO; Year: 2018

Key findings: education access

• Many countries haven't achieved **universal primary education**, especially among the countries in **Sub-Saharan Africa** and those in **conflicts**, such as Syria and Yemen.

• Apart from several high-income countries, most Arab countries haven't achieved **universal secondary education**.

Source: author's analysis based on The World Bank and UNESCO data

| Education development level	High	Middle	Low
NER	Primary NER & secondary NER >95%	Primary NER>94% & secondary NER between 85%-95%	Primary NER <85% & secondary NER <75%
Feature	Universal or close to universal primary and secondary education	Universal or close to universal primary education	Low level of enrollment rate and high level of out of school rate
Countries	Oman Qatar Saudi Arabia United Arab Emirates	Bahrain Egypt Palestine	Comoros Djibouti Jordan Mauritania Sudan Syria Yemen

Key finding: education progress and retreat

- **Progress** can be found in most Arab countries in **access to primary education** in the past decade. The increase is especially fast in Sub-Saharan Africa.

- 3 countries have increased over **10%**

- Primary education enrollment **declined** more than **20%** in **Syria**

Primary NER increase
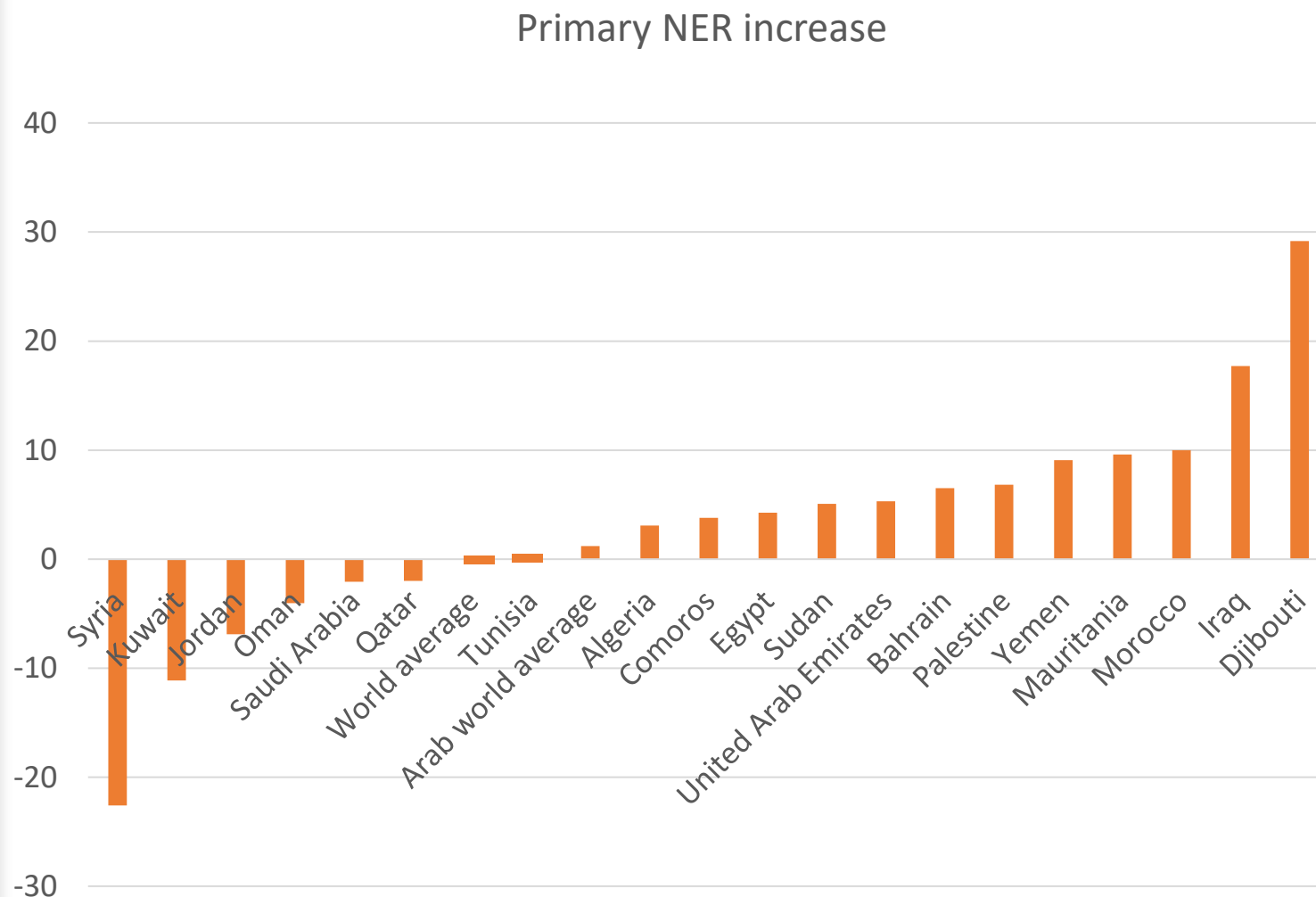
Source: author's analysis based on The World Bank data
The most recent year: 2013-2019

Key finding: education progress and retreat

- **Progress** can be found in most Arab countries in **access to secondary education** in the past decade. The increase is especially fast in Sub-Saharan Africa.

- **8** countries has increased over **10%.**

- Secondary education enrollment **declined** more than **20%** in **Syria**

Secondary NER increase
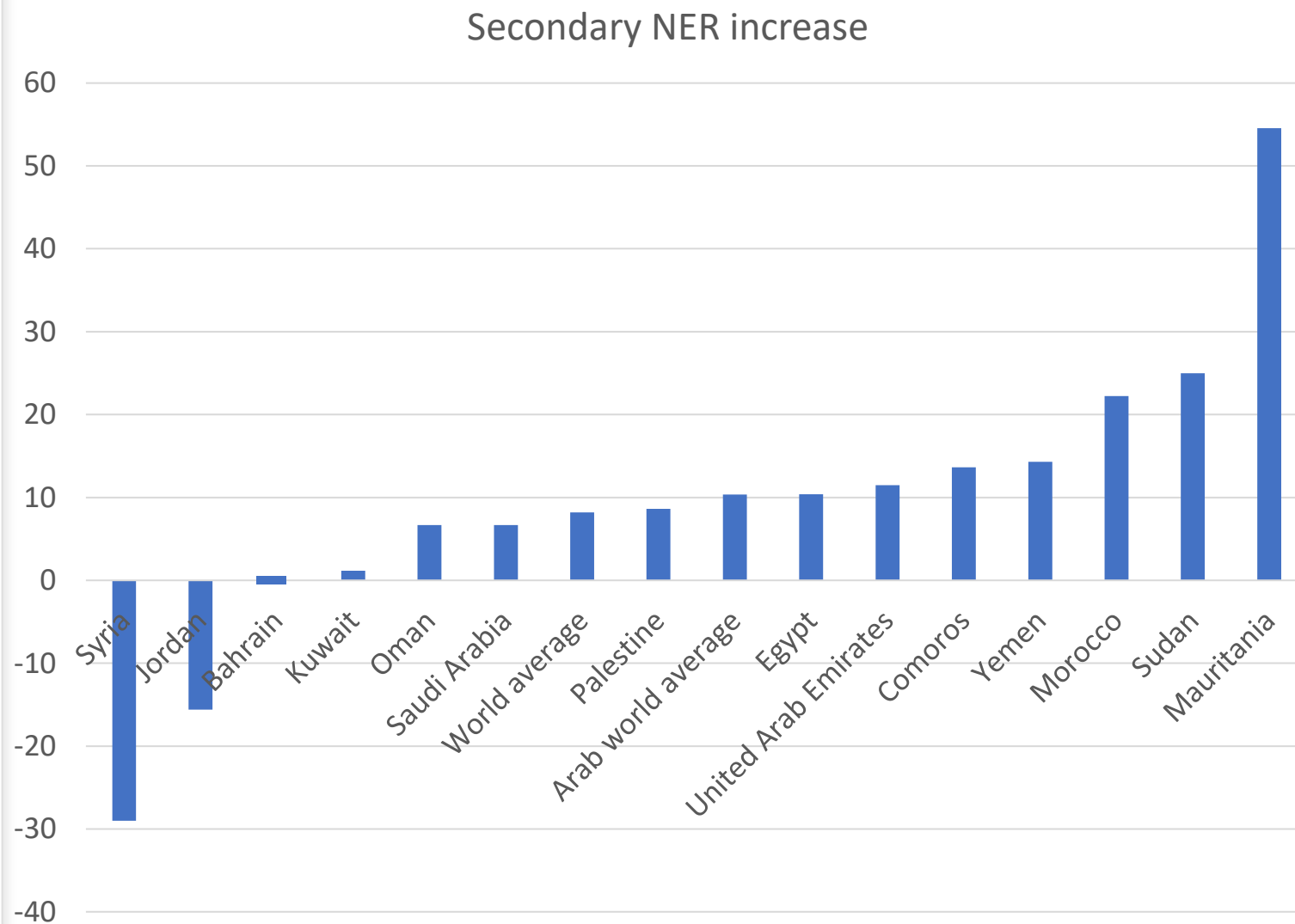
Source: author's analysis based on UNESCO data
The most recent year: 2013-2019
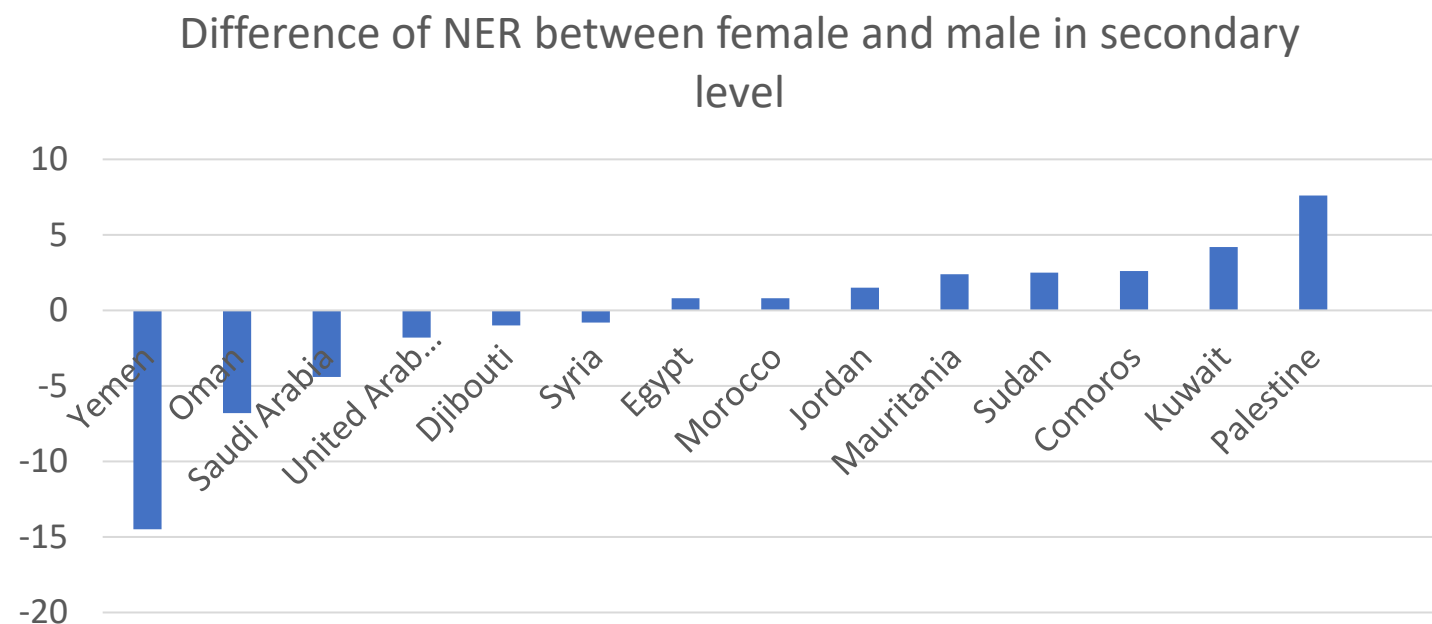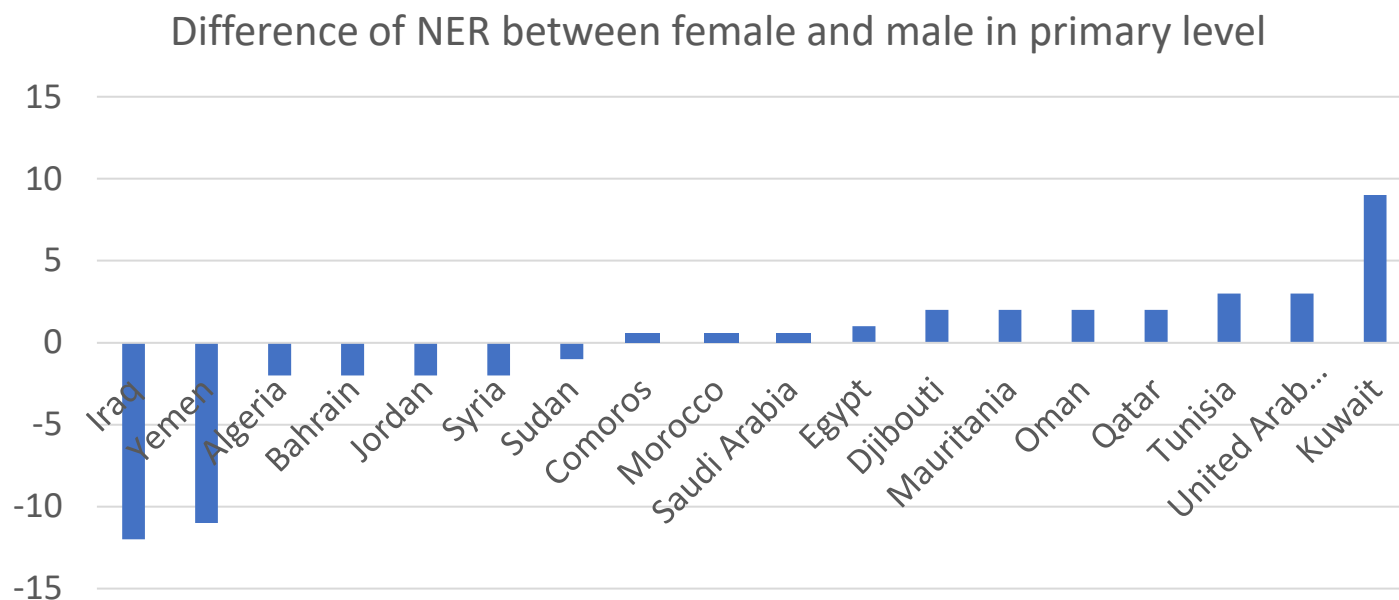
Key finding: education under conflict

- Education in Syria and Yemen have been suffering from a severe **deterioration** in the past decade because of the **conflict**.

- In **Syria**, primary enrollment rate decreased **34** percentage points for **grades 1 to 12** in the school year ending in 2013. For Syrian refugee children who live in Lebanon aged 6 to 14, only **12** percent of them are able to attend to school (United Nations, 2015).

- In **Yemen**, **one in seven** children of primary school age is out of school; **one in four** adolescences of lower secondary school age is out of school; **one in two** youth of upper secondary school age is out of school(UNESCO, 2021).

Picture Copyright： UNICEF

Key finding: gender disparity

• In some countries, gender disparity in access to primary and secondary education favors **male**. Improving access of education of female is necessary, especially in **Yemen.**

• Difference= Female NER- Male NER

Difference of NER between female and male in primary level

Difference of NER between female and male in secondary level

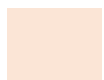Source: Author's calculation based on UNESCO data; Year: 2004-2018
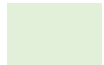
Key finding: gender disparity

- In most Arab countries, gender disparity favors **female** in the higher education level. Male' s participation in higher education is inadequate.

- Female's attendance in higher education is most challenged in **rural area** and **low-income family background** of low-income countries.

Difference of NER between female and male in tertiary level
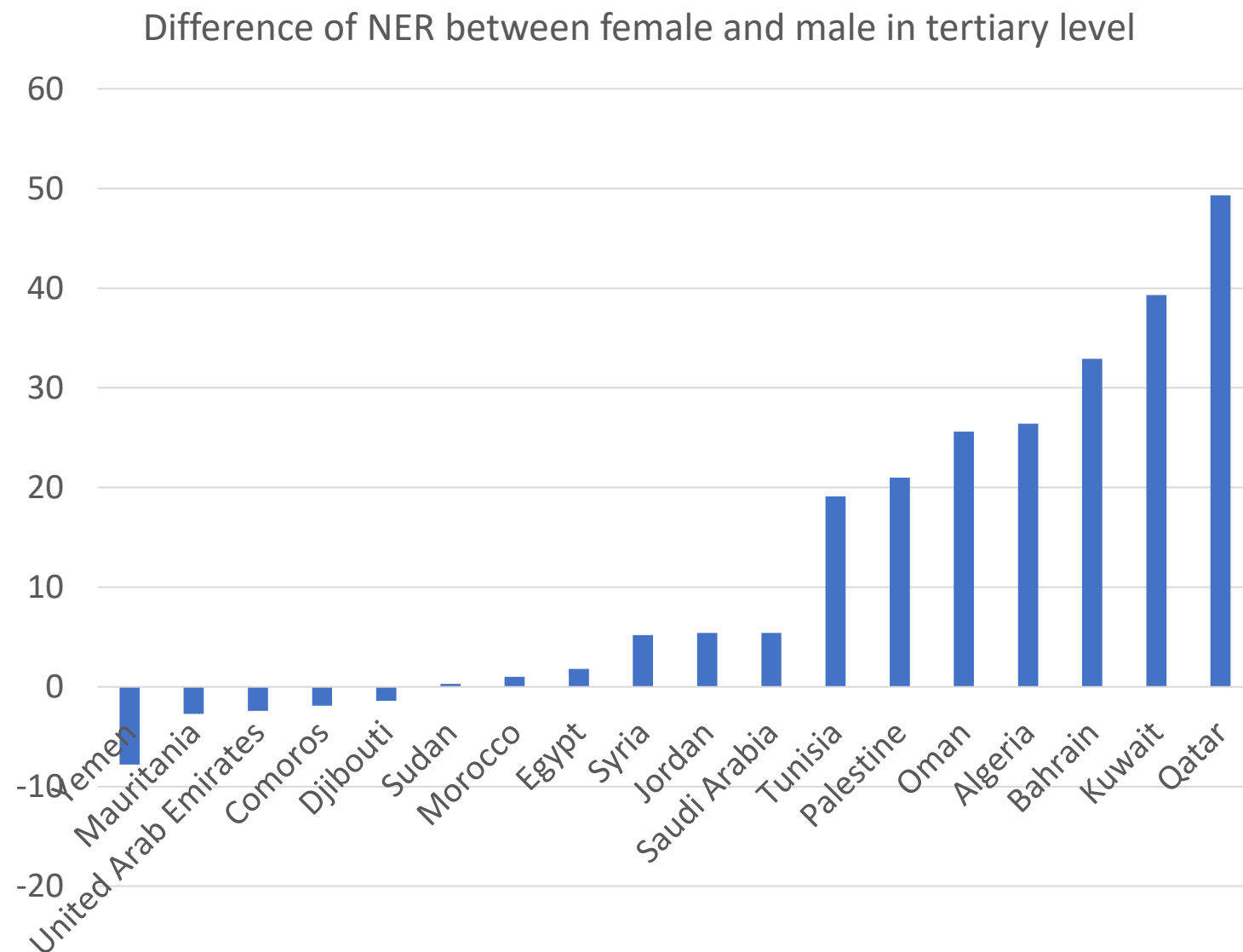
Key findings: education expenditure

- About half of the Arab countries have **insufficient expenditure** in education (**below 15%** of public expenditure to education or **below 4%** of GDP)

	Insufficient : below two indicators
	Above one indicator
	Sufficient: above two indicators

Country	% of government expenditure	% of GDP
Lebanon	5.9	2
Sudan	9.4	2.2
Mauritania	10.3	2
Bahrain	10.6	2.5
Egypt	10.9	3.8
Oman	11.2	3.9
Kuwait	13.4	3.8
Algeria	11.4	4.3
Yemen	12.5	5.2
Qatar	15.1	4.2
Morocco	17.5	5.3
Saudi Arabia	19.3	5.1
Syria	20	4.6
Djibouti	22.5	8.4
Tunisia	25.3	6.3
Comoros	29.2	4.4

Source: UNESCO Year: 2006-2008

Key finding: education quality

- Arab students' academic performance is still below the average in PISA

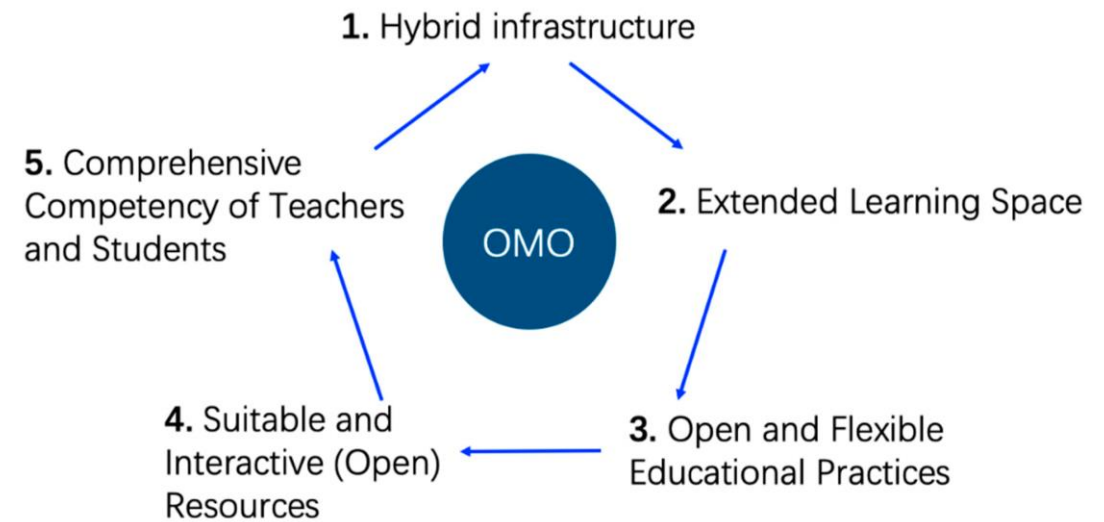| Country	Reading	Mathematics	Science
United Arab Emirates	432	435	434
Jordan	419	400	429
Qatar	407	414	419
Saudi Aribia	339	373	386
Morocco	359	368	377
Lebanon	353	393	384
OECD average	487	489	489
Source: OECD PISA 2018			

Key finding: OER

- The **absence of motivational factors** is one of the common problems which made the Arab participants do not develop and publish OER (26%), followed by **lack of time** (21%), **copyright problems** (20%) and the **absence of authoring tools** (17%) and **lack of awareness** (16%).

- Very limited countries initiated some policies to support open licenses.

Pie chart: OER challenges in the Arab region — 20%, 17%, 26%, 16%, 21%

Legend:
- Copyright problems
- Absence of OER authoring tools
- Absence of motivational factors
- Lack of awareness
- Lack of time
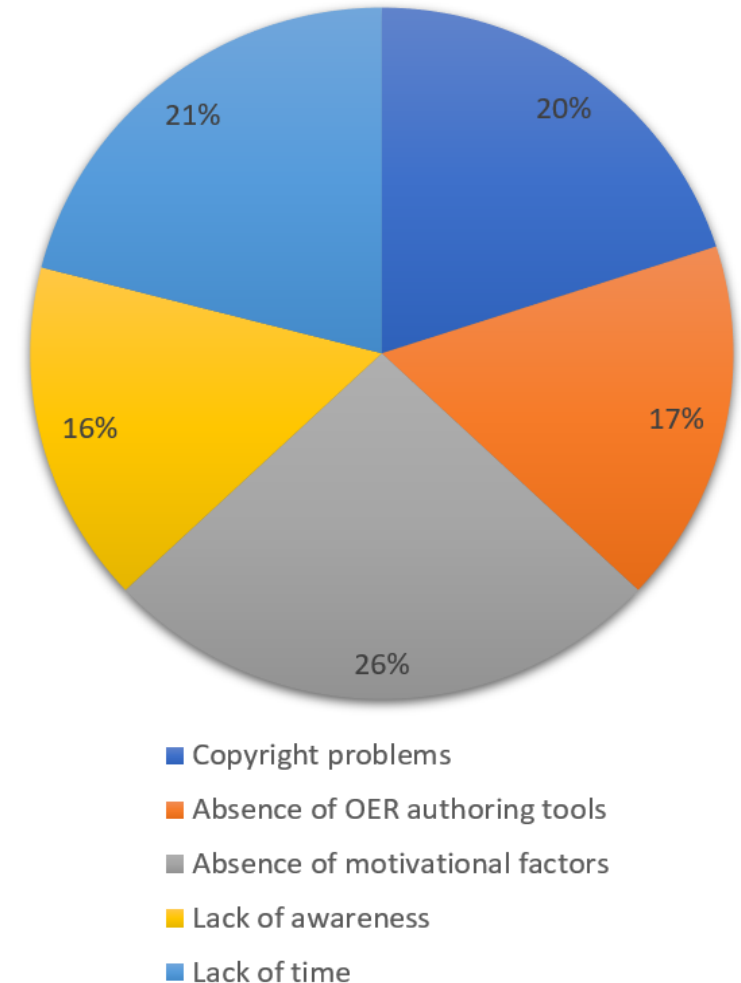
Recommendation 1: improve education access by OMO

- The adoption of **innovative learning approaches** can create a second learning opportunity for those who cannot attend physical classrooms. For example, **Online-Merge-Offline (OMO)** as a learning approach merging both the physical and online environments together, can give students a more engaging and authentic learning experience.

1. Hybrid infrastructure

5. Comprehensive Competency of Teachers and Students

OMO

2. Extended Learning Space

4. Suitable and Interactive (Open) Resources

3. Open and Flexible Educational Practices

Recommendation 2: improve education quality by international collaboration and next generation information technology

- **International collaboration** between Arab countries and other countries with good performance in International assessment. Experience from other countries can be adopted to improve the quality of education in Arab region. The collaboration can be launched in teacher training, curriculum design, textbook design, assessment design etc.

- **Using technology for better learning**: For example, utilizing Virtual labs and simulation environment to provide hands-on learning and improve the quality of education of Arab region.

Recommendation 3: promote education resilience in conflicts

- Provide **low-cost learning technologies or mobile classrooms** that could be easily deployed and moved to the places that are affected by conflict. For instance, **intelligent classroom**, could be one of the solutions.
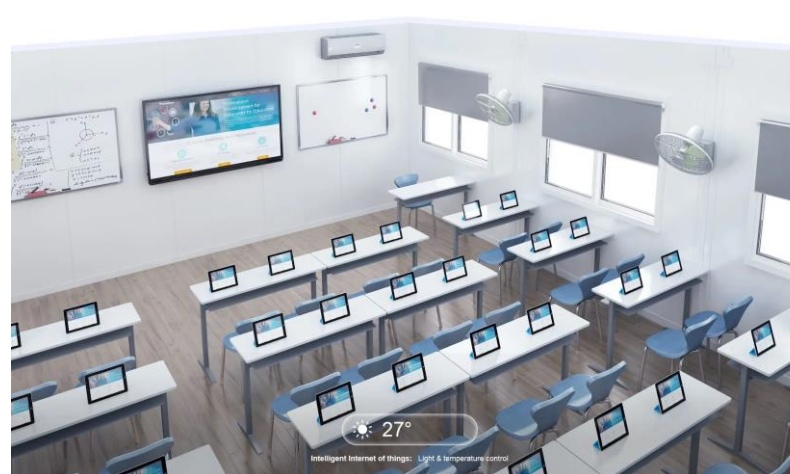
Recommendation 4: enhance supportive ICT environment

- To establish a trustful environment of using ICT, more **laws/regulations** should be issues to protect users/publishers, such as copyright laws or privacy laws.

- **Cybersecurity trainings** could be designed to help users learn how to safely use ICT and protect themselves, when needed.

- **ICT trainings** for those at an early-age is mandatory, as they are exposed to the frequent use of ICT and lack the basic knowledge of protecting them selves online, such as, not sharing their personal information with strangers online.

- International collaboration in **infrastructure building** to improve network

Recommendation 5: Enhance Teacher professional development using OER and OEP

- Develop international OER repositories. In this context, the e-library could be one of the projects to facilitate and enhance OER adoption and use to overcome the lack of time issue, the process of creating OER must be timeless and

- Developing authoring tools which can help in creating OER with simple steps.
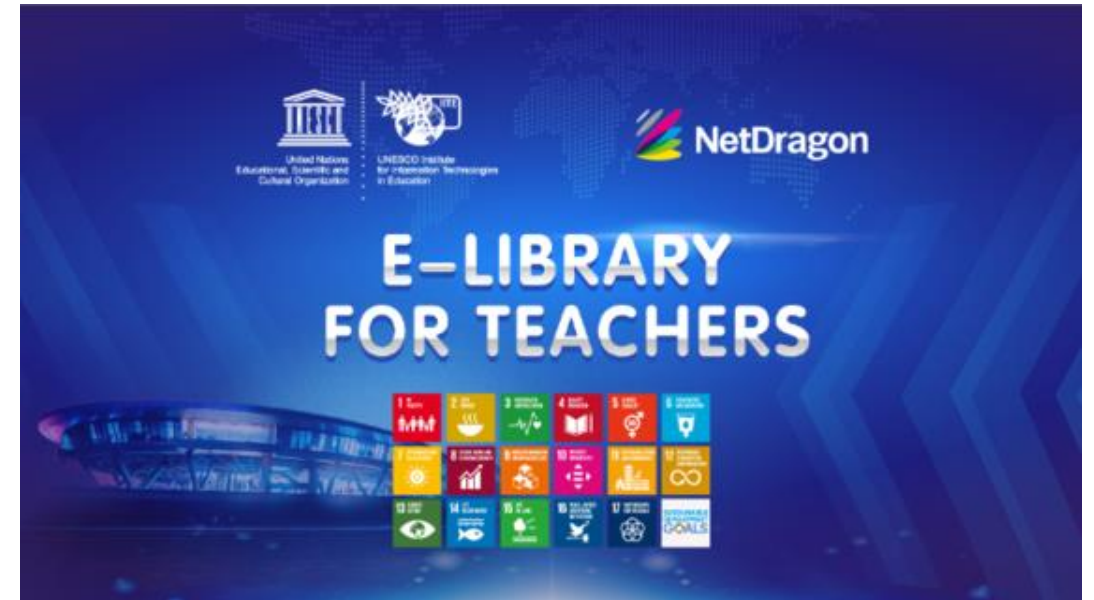
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