Digital Education in the Mediterranean. State of the Art and Barriers towards Cooperation and Collaboration

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This article attempts to assess the current status of digital education in Mediterranean countries and reflects on the development of Information and Communication Technology (ICT) integration in education and training and its relevance for education reforms in the region. It also seeks to summarize the state of the art of digital education in the Mediterranean and identify the barriers towards cooperation between the MEDA countries.

Introduction

Digital education resources and practices are increasingly being leveraged to facilitate cost-effective and equitable access to quality education. This paper argues that despite the real differences among the Mediterranean countries, a shared will and intention towards ICT integration in education can be acknowledged. The paper will first give a general overview of digital education in the Mediterranean countries, and then look at the challenges of a fully cooperative digital policy in education.

In this study, we used the geographical definition of Mediterranean countries, i.e., the 22 countries that border the Mediterranean Sea: Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Palestine, Slovenia, Spain, Syria, Tunisia and Turkey. Throughout its millennial history, the Mediterranean has been a strongly significant cradle of education, the most valuable intangible capital for an individual or society of any one country or region. In current times, the region is under great strain (overpopulation, urban expansion, water scarcity, political turmoil, economic crises, etc.) and, as a consequence, is dealing with acute socio-political, ecological, financial and cultural challenges. The region has witnessed a drop in productivity and a high rate of unemployment.[1] Such challenges need to be addressed by education in an integrated, pragmatic, yet innovative way; digital education, as such, could enhance the ability of learners to think, work and act together for their own fulfilment and identify pioneering solutions. A long-term solution to such predicaments is education that targets the achievement of sustainable development.

A Socio-Political, Economic and Technological Framework for the MEDA Region

The MEDA region is heterogeneous, with a frail regional identity and sensitive differences between one country and another – the aftermath of different colonial and post-colonial experiences – in terms of culture, economic structure, labour markets and education systems.

Enhancing trade cooperation among MEDA countries and with European Union (EU) countries has been crucial for trade growth and economic development. The region is mainly characterized by transi-

[1] European Training Foundation. "Unlocking the potential of youth, in the Southern and Eastern Mediterranean." ETF, 2021 https://bit.ly/3xm3ykE

tional economies where recent political turmoil has led to serious problems. The current level of economic integration in the EU-Mediterranean region is still considered to be low, and regional trade integration between Mediterranean countries still inadequate.
A comprehensive review of education policies reveals that Mediterranean countries rarely feature as a group around which analytic and systematic studies of education systems are planned. Instead, there are individual case studies of countries around the Mediterranean Basin or even comparative analyses between two or three countries in the region. Most countries' economies are heavily reliant on agriculture and there is inadequate access to education in rural areas; a gender divide for applying for and accessing education; modest education systems and limited professional aspirations, which influence career prospects.

Internet Penetration: France and Spain in First Place

According to UNESCO, 90% of internet users live in industrialized countries. There is a strong correlation between the level of industrial development and access to information: "The asymmetries that affect the global distribution of people connected to the internet are particularly flagrant."[2] In the last decade, the penetration of technology in the region has spread quickly, although remaining a challenge in many countries. The growth rate has varied dramatically between countries, and there are still discrepancies. In 2019, all European Med countries, Israel and Lebanon had a usage rate above 70%. The number of internet users in Israel increased by 297,000 (+4.3%) between 2019 and 2020. Internet penetration in Israel stood at 84% in January 2020. Syria and Egypt were the countries with the lowest internet usage rate. Internet penetration in Syria stood at 47% in January 2020, in Egypt it stood at 57.3% in January 2021 and in Albania it stood at 69.6% in January 2021. While France and Spain have been leading the way with the highest recorded numbers of internet users: 59.47 million in France and 42.54 million in Spain. Internet users in January 2021 reached 91% of the total population in both countries. Italy has preserved the same rate for the 21st century as for the 20th century, at 58%, showing no growth in internet users. In 2021, the rate surged to 83.7%. Albania was the country with the lowest usage rate in Euro Mediterranean countries, with only 69.6% of its population using the net in January 2021.[3]
In contrast to Europe, North African countries' internet usage started increasing only at the beginning of the 21st century. The number of internet users in Tunisia increased by 48,000 (+0.6%) between 2019 and 2020) and internet penetration stood at 64% in January 2020. Tunisia and Morocco have outperformed their North African peers, but are still to breach the 70% threshold. The poorer performers were Syria and Algeria, with 69.6% in January 2021. From 2013 to 2015, however, Algeria's internet usage rate more than doubled, and by 2015 it had caught up with Egypt (57.3% in January 2021).[3]

E-Learning Initiatives for Teachers and Trainers in the Mediterranean Region

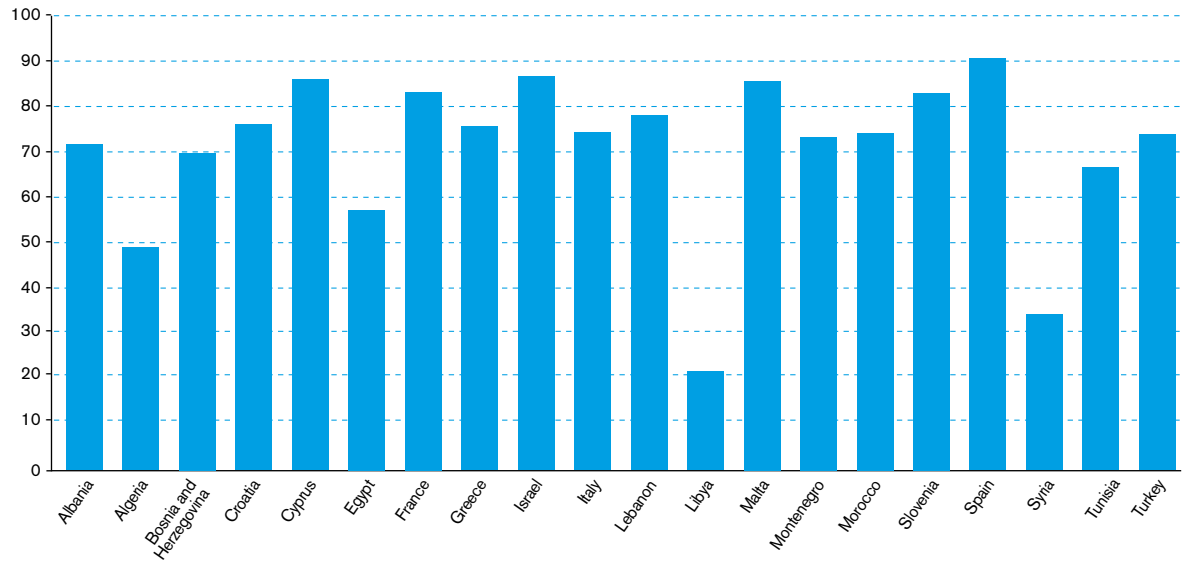
While some countries in the North have started offering e-learning courses and achieved varying degrees of success, other institutions and newly established online or hybrid educational organizations in the Middle East (ME) are in the early phases of trying to get students and their parents to accept and adapt to the concept of digital education, and are still at the very early stages of setting up such programmes. Steps have been taken towards overcoming the challenges, towards a possible enhanced future of e-learning. The European Training Foundation (ETF) has produced several reports on teacher and trainer training in the Mediterranean region, describing regional practices and identifying major problems, as well as the actors and institutions involved.[4]

Projects and E-learning Plans and Initiatives and Teacher Training

Several countries have started implementing programmes in education by integrating ICTs from the

[2] UNESCO, *Towards Knowledge Societies*, UNESCO World Report, UNESCO Publishing, 2005, p.31
[3] All the data for this paragraph is from https://datareportal.com/
[4] Coulon, A. *E-Learning Initiatives for Teachers and Trainers in the Mediterranean Region: Comparative Analyses*. European Training Foundation, 2009. Available from: EU Bookshop. https://bit.ly/369tJ20

CHART 38 **Individuals Using the Internet (% of population) in the Mediterranean 2017-2019**



Source: World Bank, https://data.worldbank.org/indicator/IT.NET.USER.ZS

very beginning. For instance, Tunisia's 1999 Family PC programme provided each household with a computer and an ADSL connection. In Lebanon, the national strategy for integrating ICTs was supported by the World Bank, the United Nations Development Programme (UNDP) and the European Union (EU). The *Grande école du numérique*, was launched in 2015 in France as a network of over 400 certified training programmes open to everyone.[5] (The programme aims to meet the rushing demand for digital skills in the labour market and re-include those excluded from employment and/or training). Nevertheless, other countries like Syria and the Occupied Palestinian Territories were left behind in terms of infrastructure improvement and do not currently have any plans to remedy this. Some projects have been deferred because of the political situation.

At a wider level, some projects have been implemented in the MEDA region, as listed below:

a) IntraMEDnet project

Financially supported by the European Union as part of the Interreg III B Archimed programme, scientists from different institutions of the Mediterranean Area (Greece, Cyprus and Italy) take part in this project intended for developing related educational modules, which have been combined in a virtual classroom on the Internet. The aim was to create integrated educational units. To identify the educational needs and excellencies of the group's associates, they started by identifying the general thematic areas of common interest, before the partners developed learning objects for each area, which have been taught in the general curricula of involved institutions. The learning objects can be shaped to support self-directed and/or instructed problem-based learning. The project also considered enhancing these virtual connections and collaborations between universities and research centres of the Mediterranean Area to share the learning process and support research collaborations.[6]

b) OpenMed project

The OpenMed project, supported by the Erasmus+ Capacity Building in Higher Education programme of the European Union during the period 2015-2018,

[5] European Commission. "20 Outstanding Projects Reach the Finals of the European Digital Skills Awards 2017." Shaping Europe's Digital Future, European Commission, 2021, https://digital-strategy.ec.europa.eu/en/news/20-outstanding-projects-reach-finals-european-digital-skills-awards-2017

[6] "A Mediterranean Research and Higher Education Intranet in Medical and Biological Sciences (IntraMEDnet)." EHealth Lab, Department of Computer Science, University of Cyprus, https://bit.ly/3xm8HsY

has aimed to expand participation in and adoption of Open Educational Resources (OER) and Open Educational Practices (OEP) as a bottom-up approach to sustain the modernization of the Higher Education sector in the southern Mediterranean. The project involved an international group composed of five partners from Europe and nine from southern Mediterranean countries. The project's goals were:

— Clarifying the justification for the provision of high-quality OEP and OER in Higher Education Institutions (HEIs)
— Investment in infrastructure to ease process development and ways to transition materials and programmes
— Piloting course accreditation schemes through institutions that may be a useful means of promoting OEP as a reputable form of learning, where national educational authorities do not recognize online education
— Supporting staff needs to help them find ways to integrate OER with their official academic learning resources.[7]

c) The MEDA-ETE project

The MEDA-ETE project (Euro-Mediterranean Partnership's Education and Training for Employment) was launched in the 1995 Barcelona process, and in the political, economic and social partnership which had started between European Union countries and 10 states of the Mediterranean Area (Israel, Jordan, Egypt, Turkey, Syria, Palestinian Authority, Lebanon, Algeria, Morocco and Tunisia). The MEDA programme represents the main financial mechanism for the partnership. The project's objective is to support the MEDA partner countries in the development and implementation of relevant politics in education and technological training, which can help promote the development of human resources through a regional dialogue approach between the associated countries. Education and training have been identified as key tools for endorsing economic and social growth in the MEDA region and growing competitive economies in open markets.[8]

Mediterranean Strategy on Education for Sustainable Development (MSESD)

Education is a prerequisite for achieving sustainable development and an essential tool for good governance and the promotion of democracy.
Despite the diversities and the serious socio-economic, environmental and geopolitical challenges, the strategy succeeded and was an achievement of the Mediterranean region. The utmost respect for education and a genuine will for supporting it is a prerequisite for sustainable development and progress.
The Tbilisi+35 Conference (6-7 September, 2012) Communiqué 9 acknowledges the achievements of environmental education (EE) and education for sustainable development (ESD) at the regional level. Article 33 recommends strengthening and upgrading international mechanisms, organizations and institutions for transferring knowledge, technologies and innovations, for creating viable ESD capacities worldwide. The principles of the ESD, "apart from the traditional ones, should include among other things, brainstorming, debate and argumentation, conceptual and perceptual mapping, philosophical inquiry, value clarification, simulations, scenarios, modelling, role-playing, games, ICT, case studies, learner-driven projects & Project-based Learning (PBL)."[9]

Barriers towards a Mediterranean Digital Education System

The Mediterranean is a multifaceted group that cannot be assembled into one group. Starting from the divergent histories characterized by imperial and nationalistic ambition, inequality of power and economies, political turmoils, varied cultures, religious and linguistic dissimilarities make it difficult for anyone to speak prudently without resorting to the plural form – the Mediterraneans.

[7] OpenMed, www.openmedproject.eu/
[8] MEDA ETE, European Training Foundation. Euromed Observatory Function Objectives, Results, Instruments and Evolutions Methodological Notes, 2008. https://bit.ly/2TlKyOL
[9] Partenariat Euromed. Mediterranean Strategy on Education for Sustainable Development (MSESD). UfM Co-Presidency, 31 March 2014. https://bit.ly/3AJsOUa

So, Is It Easy to Speak about a Mediterranean Digital Education Plan or Policy?

Although the region has strong human, economic and agricultural resources, in the context of the major gap between and within countries as we have illustrated above in terms of digital readiness, political and economic turmoil, and even education systems, it seems unrealistic to talk about an e-learning system for the entire group. For instance, a comparison between France and Syria regarding political institutions, technology, culture, education and health shows a huge divergence. We cannot determine whether the relatively poor countries with per capita GDP below the average can catch up with the richer countries of the Mediterranean regarding digitalization of the education sector. While in France and Israel, about 80% of schools have computers, and over 70% of these are connected to the Internet, most by high-speed connections, in Syria, secondary and primary schools have computer equipment, but few are connected to the Internet. In Lebanon, the number of schools with internet access is still below the average. In terms of personal data protection, the Mediterranean region is where the population's confidence is the lowest in the world. Moreover, even among the members of the MEDA region, there is a huge gap between countries of the MENA region and Euro-Mediterranean countries. Therefore, it is a requisite to have suitable regulations regarding personal data confidentiality, data governance and digital security in the region through the establishment of all-encompassing development plans that can ensure social and territorial cohesion between countries. Another indicator that widens the gap within the MEDA countries is the digital divide and its impact on the development of Mediterranean countries. One crucial stakeholder in making any ICT effort successful is the effectiveness of the public sector. That is the role of governments. The success of any ICT development effort is determined by the extent of the government's commitment.

The digital divide has often been attributed to these disparities between governments' efforts in ICT policies, ICT infrastructure and the availability and use of specific applications, such as banking, education or health, to the implementation of electronic government (e-government). Each type has its own trends that vary across countries and regions. According to the UNESCO report, this digital divide feeds a second divide: that of knowledge. The fact that this divide exists between countries of the North and the South is no surprise.

Conclusions

Several MEDA countries are already providing good ground for integrating ICT into their education and training systems; however, the situation varies considerably from one country to another, in terms of infrastructure, penetration rate, services ranging from telecommunications such as internet connectivity, Mobile Network Operators, fibre optic backbone, data and media services, teacher training programmes and initiatives for digital education. All these indicators and many other contextual factors should be considered when designing an e-learning system for the region. If the aim is to build a way out for the entire Mediterranean region, all these differences and limitations will shape the choice of the digital education policy and ICT integration plans as it must be compliant to the availability of infrastructure and the skills of human resources, including teachers, administrators, technicians, managers and learners.

Other Resources

Weber, Alan S. and Hamlaoui, Sihem. *E-Learning in the Middle East and North Africa (MENA) Region*. Springer, 2018.

Liu, Dejian et al., (editors). *Comparative Analysis of ICT in Education Between China and Central and Eastern European Countries*. Springer Singapore, 2020.