Progressing Attitude towards Sustainability: The Developmental Role of Open Sciences on Open Educational Resources in the MENA Region

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ABSTRACT: Open science is crucial for researchers as it entails sharing all the research methods and their results in an entire project. This research focuses on the issues of Open Science Resources directing its focus specifically to the MENA region and the global stakeholders, aiming to assist them in developing structured practices and policies. Therefore, ensuring long-term sustainability and completeness in the education system. However, problems emanate from the negative publicity surrounding publishing services within the subject-field practices. The data collected through a questionnaire conducted by the researcher under methodology will help focus the research on providing evidence to prove the role Open Education Resources (OERs), played in the MENA region. The research also looks at the recommendations addressing the need for necessary infrastructure to facilitate and make open education practices more sustainable to communities. The data on OERs deemed reusable and accessible will aid the MENA region in achieving its sustainable development goals in the long run. These elements will go a long way in designing the necessary support to lower the barriers to research outputs and facilitate potential secondary researchers' access to existing resources. The region will reuse and repurpose the data and eventually realize additional research opportunities. Research integrity will also adhere to as researchers tend to act honestly and reliably, and a conducive environment will be created that reflects the Open Science agenda.

KEYWORDS: open educational resources, sustainable development goals, MENA region, open sciences

Introduction

The Middle East and North Africa (MENA) region is composed of approximately 19 countries, but it can also stretch to further include about 24 countries. UNESCO has defined Open Educational Resources (OERs) as free and modifiable educational materials (Bartoszewicz 2019). These materials are considered to have a bigger potential of increasing access to education in the improvised and remote communities relevant to a substantial portion of the aquaculture community. Many educational initiatives, such as the EU Horizon, investigate whether OERs have a key role in achieving its objectives. The first developers have banked so much on the development of OE, its contribution, and the ongoing sustainability as a matter of concern for all the potential developers. Several reasons OERs can be of great significance when implemented, especially in the MENA regions. One of these includes its opportunities and needs. Open educational practices will offer key opportunities for effective organizational development to higher education institutions. This will be achieved when they give access to quality education in delivering content offered by the international

academic community. Also, OERs are considered tools of innovation that can act as catalysts of cultural and organizational change (Blessinger and Bliss 2018).

Literature Review

The most important question is why every individual and institution engages in OERs. In trying to answer this, many countries, not only from the MENA side, have put forward some arguments that bring on board the key relevance of the program. One of these arguments is that free sharing leads to a broader and faster passage of information, involving many people in problem-solving and facilitating rapid quality improvements.

According to Shaw, Irwin and Blanton (2019), from the point of view of institutions, major arguments have been put forward that are involved in the OER projects. The considerate argument posits that sharing knowledge is one of the best options and is in line with the academic traditions indicated by the Open access movement. Openness is a major aspect of education and research, and the resources created by educators and researchers, in general, should not be restricted to use and even reuse (Mallery 2016). Additionally, education institutions are considered good for public relations.

As far as internationalization and the readiness to adopt are concerned, programs of academic exchange and scientific collaboration have been one of the major strategies and policies in the institutional positioning of the universities. The higher education centers that participate in the OpenMed projects usually receive students from both Arab and African countries, as their graduates often choose to move to European and USA universities, particularly when they want to complete their doctorate level of education. The MENA region has a greater say in its university systems. Hence, it has established a difference between the eastern and the western Arabas that differ not only in the Arabic dialect but also in the greater connection with the French and the Anglo-Saxon academic model, respectively.

According to Pounds and Bostock (2019), collectivism and power distance are other primary elements of the OERs. From the context of MENA regions, the reuse of the educational content should often be under the context of intercultural contact. As soon as the didactic materials are created in the context bearing the organizational culture or national culture deemed different from the university system, the cultural diversity factors can be considered decisive for effective implementation. Comparing this with the context of Europe and North America, both the North African and the Middle East regions have been argued to have a more collective behavior that prevails and with bigger power distance. As a result, the group membership and its hierarchy possess comparatively more weight.

On the barriers and difficulties that might be experienced during the implementation of the policies in the MENA region, experts and governments need to be keen on the strategies put forth. One of the major issues faced includes the idea of awareness. There is always a low awareness concerning the opportunities offered by open education. In most cases, the students and the professors will always perceive the online classes as a way of depicting low-quality teaching in the classrooms. Secondly, the open education resources sometimes affect the income of the teaching staff. Thus, there will be some friction when the same idea is sold to the teachers on its implementation. Additionally, there are other standards and restrictions from the higher education institutions directed at the use of all educational content, from the approval of all the authorized books to the open cases admitted to the students (Kamphuis and Kanavos 2021). One example is that from some of the universities in the Middle East, the percentage of teaching done online is between 20% and 30% of all the teaching

material (Kamphuis and Kanavos 2021). Besides, the scarcity of all the OERs in Arabic may be considered inferior compared to other countries' content.

These difficulties mostly become more conspicuous at the level of implementation of the OERs that were learned at the center of the OpenMed project. Therefore, the proposal from the experts incorporated the incentives that later boosted the development of the training in the interviews (Blessinger and Bliss 2018). The experts also agreed that the participants needed to come from the same university, which was seen as more comprehensive than the exchanges made at the regional or international levels.

Methodology

The methodology used in this paper is both qualitative and quantitative. The quantitative data is based on the analysis of the Open Science Resources in the MENA region. In contrast, the qualitative information is based on consultation with stakeholders in the area. Qualitative methodology is used to understand better the stakeholders' perceptions and views on Open Science. This will help develop effective policies that will improve the region's research quality. Similarly, the quantitative methodology is also used to analyze the Open Science Resources in the MENA region. This will help understand the extent of open access and its impact on research outputs. Other methodologies used to conduct the research include interviews, focus group discussions, and surveys.

Interviews, for example, are used to collect qualitative data from experts in the field. This will help them understand their perceptions of Open Science and its impact on research outputs. Focus group discussions also collect qualitative data from several regional stakeholders to understand their views on Open Science and its impact on research outputs. Surveys are also used to collect quantitative data from a representative population sample. This will help understand the extent of open access and its impact on research outputs. For example, a survey was conducted to understand researchers' perceptions of Open Science. During the survey, researchers were asked about their experiences with Open Science and its impact on their research outputs. In response, the survey found that Open Science positively impacted researchers' work and productivity.
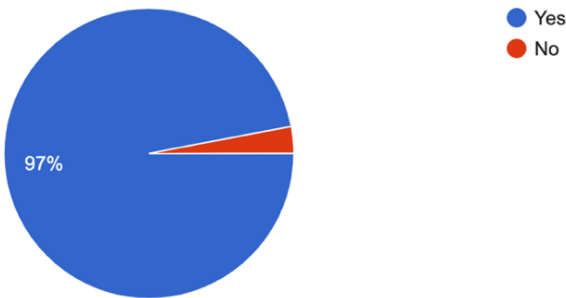
Lastly, focus groups are also used to collect qualitative data from a group of stakeholders in the region, offering additional insights into their views on Open Science and its impact on research outputs. Overall, the methodology used in this report is both qualitative and quantitative. The following section presents a questionnaire conducted by the researcher with the purpose of understanding the impact of Open Access on research outputs.
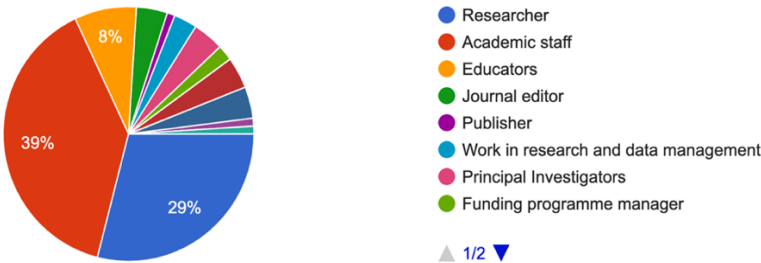
Are you familiar with the term open sciences?
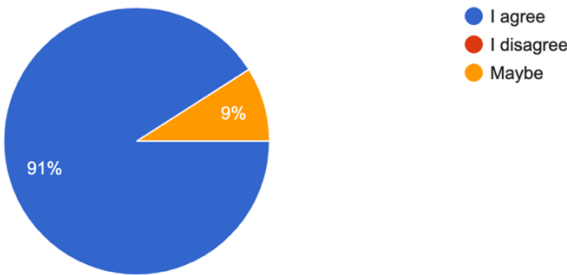100 responses
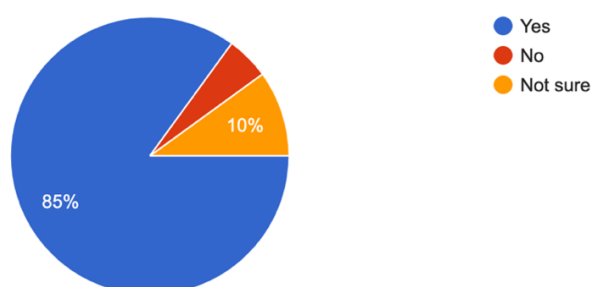
Do you work in the MENA region
100 responses

- ● Yes
- ● No

97%

Your position in your institution is
100 responses

- ● Researcher
- ● Academic staff
- ● Educators
- ● Journal editor
- ● Publisher
- ● Work in research and data management
- ● Principal Investigators
- ● Funding programme manager

▲ 1/2 ▼

8%

39%

29%

Do you think open sciences can lead a role in open educational recourses known as (OER) ?
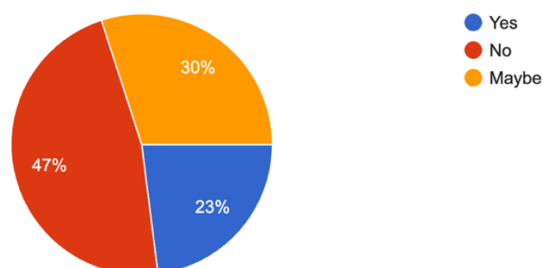100 responses

- ● I agree
- ● I disagree
- ● Maybe

9%

91%

Do you believe the reuse and repurpose of the data can assist in additional research opportunities in the MENA region?
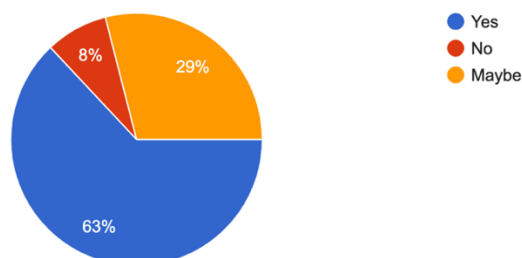99 responses

- ● Yes
- ● No
- ● Maybe

28.3%

65.7%
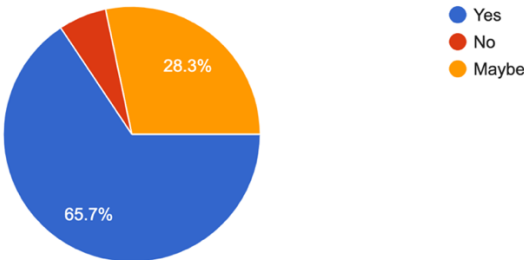
Do you think we have the necessary infrastructure that will facilitate and make open education practices possible in MENA region?
100 responses
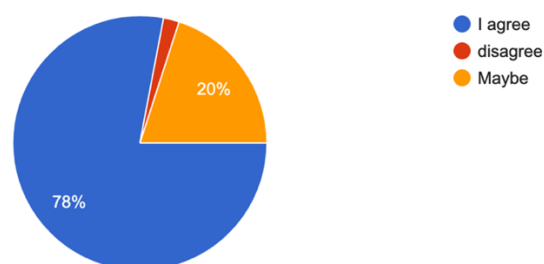
- Yes 23%
- No 47%
- Maybe 30%

Do you think the future of research and the scholarly communication in MENA region is embedded under the full access of open sciences?
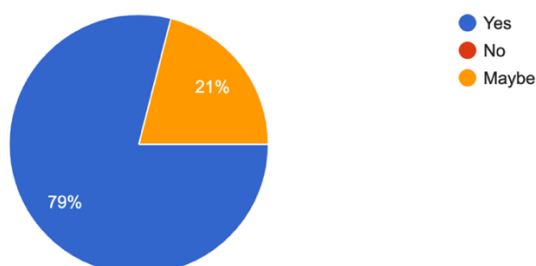100 responses

- Yes 63%
- No 8%
- Maybe 29%

Do you believe that open sciences can empower the research framework in the MENA region?
100 responses

- I agree 78%
- disagree
- Maybe 20%

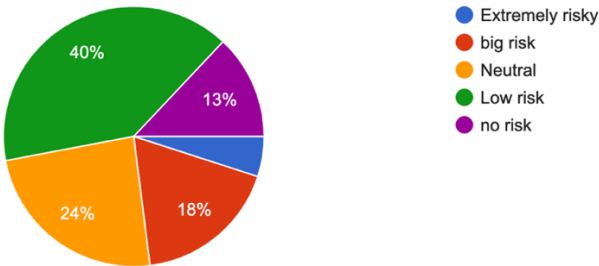Do you think open sciences can promote sustainability?
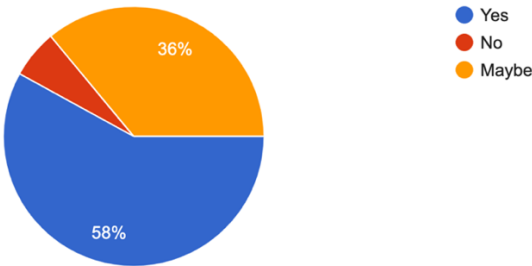100 responses

- Yes 79%
- No
- Maybe 21%

Do you support science papers and findings to be open access? rank it from 1 to 5, 1=should not be opened, 5= should be very opened
100 responses

- 1
- 2
- 3
- 4
- 5
- I guess we need to create a protective protocol
- This paper is important to reflect the difficult and tightly funded operating e…
- Please share this great questionnaire…

26%
30%
8%
31%
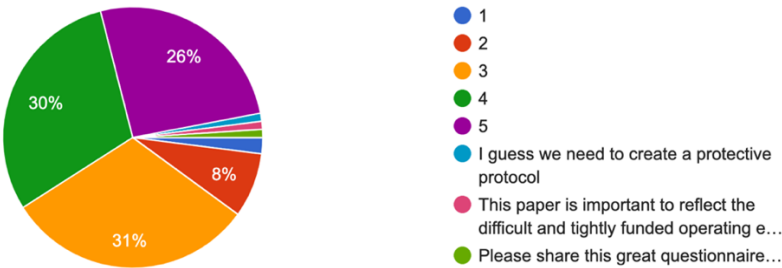
Do you think it is fair for science to be open?
100 responses

- Extremely risky
- big risk
- Neutral
- Low risk
- no risk

40%
13%
24%
18%

Do you think open access can affect funds?
100 responses

- Yes
- No
- Maybe

36%
58%

As a researcher do you feel confident towards open sciences methods?
100 responses

- Yes
- No
- Maybe

44%
51%

Please indicate your personal concern about open sciences
100 responses
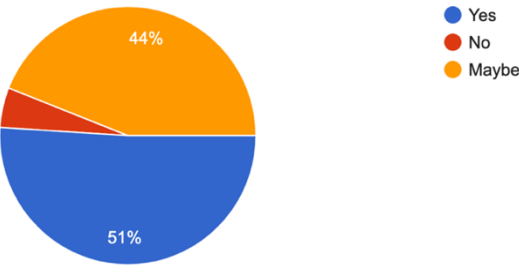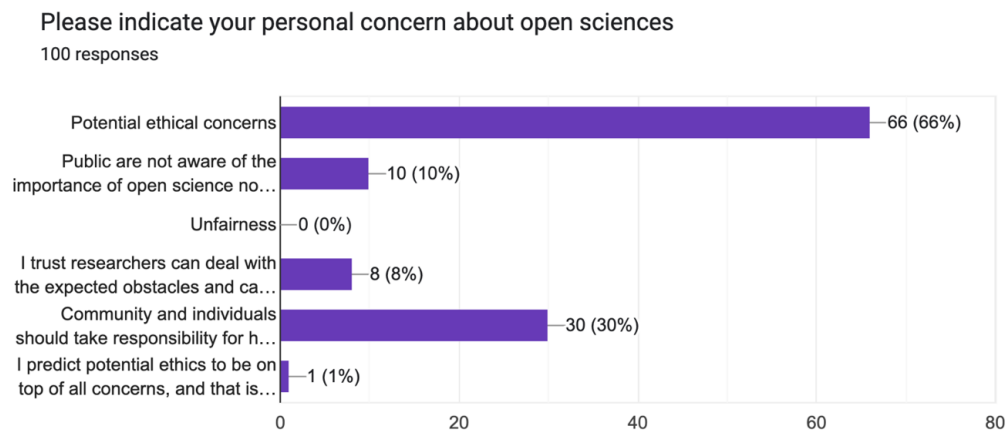
Results

Most respondents were postgraduate students who based their answers on aquaculture topics. Other major topics included biotechnology, environmental management, and other key topics (Duşe and Simó 2019). On the other hand, about 96% of the students and the educators reported using online materials for their studies to prepare for the lessons, and about 36% of them uploaded their resources to be used by others online, depending on which region they accessed the materials. On the contribution, the usage ratio for all students was capped at 0.42, while the one for educators was at 0.13. Also, the intervals indicated that in Europe and Asia, the intervals were only significant on the uploaded and the usage rates. The other regions did not command a larger size to be used for the statistical results. Overall, more students were willing to share than those unwilling to share, regardless of the drivers.

Discussion

The findings from the policies and research are all crucial elements in the overall institutionalization of all the norms and practices of a research community. The methodology section entailed the data collected from USA, UK, and Canada. These three countries have shed some light on how OERs can benefit the MENA region in achieving their sustainable development goals regarding open education resources. From the findings, it is evident that there were three major realizations from the three countries. These include the government mandate, individual councils, and inter-council cooperation. Therefore, these can be the best pillars as the MENA region tries to venture into ways the OERs can be of great significance in attaining their educational goals (Duşe and Simó 2019). Although their utmost willingness to improve the efficiency of the research process is embedded at the core of the efforts, open science policies have since gained momentum concerning accountability and the policies of innovation agendas. The MENA region needs to learn from the UK, where government support for openness has bolstered the efforts in developing the e-research infrastructure. Additionally, the US has also had its open science movement bring a lot of benefits to the economic agendas. All these are lessons that the MENA region can use to boost its sustainable development goals.

The intercultural dimension sometimes might hide the overall confluence of the organizational cultures (Conole 2018). Through this, the educational institutions will face processes that might be integral to the transformation. Hence, the movement that might be used to promote open education constitutes a major subculture that might

challenge the entire traditional academic culture. This is particularly when it is dominated by student-led teaching and the decentralization of self-directed learning and decision-making. Hence, the movement that aims at promoting open education comprises the subculture that offers challenges to the traditional culture of education. On the factors that facilitate the change, the OpenMed project has identified the different factors in adopting open education.

Conclusion

In a nutshell, from the previous questionnaire, the results reflects that open science policies and strategies will ensure sustainable development goals if the recommendations are implemented. The OERs in the MENA region will be of great significance since the options will have been weighed enough with the research on other countries done and compared. The research councils are always the primary agents in the debate on open science. Bearing in mind the future of ICT and the contemporary future advances, there are more new tools needed in the production and distribution of scientific information. Therefore, the research councils must remain consistent in navigating and implementing the efforts around the diverse stakeholders and their demands on governments. Various practical considerations also impact the policies carried out, including the barriers to adoption and all those documented.

Recommendations for Change in the MENA Region Concerning the OERs

The community's readiness to accept change to achieve their development goals needs to be aligned with what the researchers and scholars have proposed (Blessinger and Bliss 2018). In alignment with the UNESCO recommendations the integration of technologies in education brings with it organizational changes not only in traditional classrooms, but also in digital platforms, and invites to locate opportunities for educational innovation. Therefore, the community must be ready to deal with all the challenges and problems experienced, especially in leadership, shared knowledge concerning the problem, and the existing efforts. The major factor is awareness of the existing problem and the community's overall organization. Despite the obvious differences, similar factors exist in adopting open education practices. Through this, it is always good to look at the evaluation and the adoption of open education practices. Therefore, the evaluation and the adoption of the open education practices will always focus o the individual and the staff motivation.

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