REPORT DIRNA

TRAINING AT THE UNIVERSITY OF L'AQUILA

12-14 March, 2024

Introduction

The deep-rooted cooperation between Azerbaijani Higher Education Institutions (AZHEIs), the Turkish İzmir Institute of Technology (IZTECH), the University of Jyvaskylan (JYU), and the University of L'Aquila (UnivAQ) has been sealed once again thanks to the three-day training meetings organized within the ERASMUS+ project DIRNA and held from 12-14 March, 2024 in the Italian city of L'Aquila.

The DIRNA (Developing Research Capacity through Institutional Repository Network in Azerbaijan) training has been hosted by the University of L'Aquila (UNIVAQ) as a Partner Institution in order to offer a deeper overview on the UNIVAQ library system, as well as on the various aspects of Open Science. Moreover, it has provided its participants with a coordinated on-site knowelge for teaching, study, and research activities. The training has also included two visits to the main libraries of the University of L'Aquila and a cycle of seminars taken by several academic speakers and expert spokepersons. Their fundamental contributions have assessed the main issues and the long and short-term challenges of Open Science, Open Access, and Open Data.

On the one hand, it has been critically pointed out the benefits and value of Open Data, such as their increasing quality, the transparency of public services and tools, efficiency, and re-usability of information, and on the other hand, it has examined the potential risks, privacy and security implications linked to data access and sharing. The training sessions have also offered the opportunity to its partners to concretely define the further phases and key steps for implementing the Open Science practice within the academic community, the transnational Cooperation in policy development, the definition of the Summer School in Finland and the advanced trainings on research data, as well as the following activities that each participant should organize for its university in order to have similar approaches and goals to work with.

Goals of the Italian Training:

The goals of the three-day meeting session in the city of L'Aquila were:

- To enhance and strengthen collaboration, cooperation and cultural dialogue among partner universities

- To promote a better understanding of the library system and service worldwide

- To train the staff and the scientific communities on the library systems, platforms, tools, and related services

- To facilitate the practice of making data publicly available for teaching, study, and research activities

- To deeply understand the advantages, risks, and limits of Open Science, Open Data and data access and sharing

- To assess the importance of open science, open research, collecting data and developing programs and services tailored to specific needs of citizens

- To stimulate innovation by boosting the main principles of open science, such as transparency, accessibility, reusability and availability

- To underline the importance of identifying patterns and trend usage to set up more effective programs, tools, services and systems

- To expand interdisciplinarity approaches within a multicultural dimension

Visit to the University of L'Aquila (UnivAQ), ITALY

The University of L'Aquila is an Italian public university established in 1952 and located in L'Aquila, the administrative centre of the Abruzzo Region. In the last 5 years the University was the coordinator and partner in more than 40 projects, including Horizon Europe and dozens more within the international cooperation schemes in the fields of education, research, and social commitment.

On March 12-14, 2024, the University of L'Aquila hosted three-day training sessions, with the contributions of several academic experts and spokespeople coming from 8 Azerbaijan Higher Education Institutions, one delegate from the Turkish İzmir Institute of Technology, and one participant from the University of Jyvaskylan, in Finland. The meeting aimed to share information, resources and expertise for implementing the Open Science and the Institutional Repository practices, and to support Azerbaijani Higher Education Institutions in developing and improving their own applications and services.

The training started with the institutional greeting from Prof. Benedetta Mattei, the Vice Rector for research and an opening speech by the Rector Consultant for International Affairs, Prof. Anna Tozzi, in which the training objectives as well as the further steps to undertake were well defined. Nowadays, Open Science is one of the fundamental factors of the international research community and it plays a critical and major role in many scientific domains. In light of this, the complexity of the concept of 'openness' was highlighted and it was reiterated how the ongoing transition concerning the way in which research is performed and knowledge is shared can be both positive and risky and therefore, it deserves a deeper study and analysis.

The cycle of seminars begun with the initial contributions of Dr. Grazia Di Bartolomeo, Manager and Coordinator of the UnivAQ Library Area, and Dr. Antonella Di Nisio, Supervisor of the Library Sector. The two experts offered a broad insight on the UnivAQ library system and its role for Open Access pointing out the features, development and evolution of its databases, functional platforms, electronic resources, catalogues, and services. In particular, the participants received an in-depth training regarding the UnivAQ library system and the crucial role of its mission whose aim is to preserve, update and enhance the use of the University bibliographic and documentary collections ensuring the wildest and most transparent access to scientific information and resources. As underlined by Dr. Di Bartolomeo, it is necessary to train the participants on how information is made available and how users – and the scientific community in general - can freely access to the information through several tools, systems and services offered and developed by UnivAQ.

Today, the UNIVAQ Library System, made up of five libraries (Humanities Library, Economics Library, Sciences Library, Medical Library and Engineering Library) carries out its activities and services under the supervision of the University Library System Scientific Council, composed of seven professors each representing one of the seven departments of the university, a president elected by the Council, a representative of the students, and the library manager and coordinator.

From an historical point of view, until the early '90s each library of UnivAQ had its own card catalogue, then, in 1991, the catalogue developed into an OPAC (Online Public Access Catalogue) and entered the national SBN Online Catalogue. The SBN Catalogue is the union catalogue of the Italian libraries participating in the National Library Service (SBN) which is the network of Italian libraries promoted by the Ministry of Culture in cooperation with the regions and the universities, with the coordination of the Central Institute for the Union Catalogue of Italian libraries and for bibliographic information (ICCU). The OPAC SBN allows bibliographic searches in the union catalogue of the Italian libraries participating in the National Library Service (SBN). The number of participating libraries increases constantly and the network gathers universities, academies, local, national, public and private institutions.

In light of this, during the training it was highlighted how through the SBN OPAC it is possible to identify documents of interest, find libraries owning these documents and access information on single libraries, look for information on document availability, access the online loan or reproduction services in case the library joins the SBN ILL system, find the "authority records", and the controlled records finalized to guarantee the uniqueness of some access points of the catalogue.

The network of the five library unit constantly promotes the UnivAQ research and teaching activities, and all its users, by offering an intuitive and functional platform and the online catalogue, library electronic resources, databases and e-books in compliance with national legislation, depending on the cost, directly from the publisher, through an exclusive distributor, through an agency, or, if

available, via MePA (electronic market of the public administration). Furthermore, it offers e-resources and tools available at access points within the university and open access resources, such as the tool CercAQ, the discovery system allowing to query the electronic resources acquired and offered by the University libraries using a simple search by keyword, title and author, or even use the advanced search box to enter multiple search criteria. It has also been presented to participants the Open Access Search Engine, the Open Access Databases including links to directories encyclopaedias and other materials whose contents can be freely accessed by all users, as well as the Institutional Open Archives, an extensive list of Open Access digital repositories created by some of the main universities both in Italy and worldwide in order to promote the widespread diffusion of their professors' and researchers' scientific production, also as well as providing near total access to research materials.

The training also shed light on the two subscription models offered by the UnivAQ library system, such as the 'pay per read' method and the 'read and publish' model, called the "transformative agreement". As it has been underlined, "transformative agreement" can be considered as an umbrella term describing those legal arrangements negotiated between institutions (libraries, national and regional consortia) and publishers in which former subscription expenditures are repurposed to support open access publishing of the negotiating institutions' authors, thus transforming the business model underlying scholarly journal publishing, gradually and definitively shifting from one based on toll access (subscription) to one in which publishers are remunerated a fair price for their open access publishing services.

These agreements are a significant departure from the previous standard in subscription license agreements, as they bring the two transactional sides of subscription-based journals, reading access (subscription fees paid by libraries) and open access publishing "hybrid" Article Processing Charges (APCs) predominantly paid by authors, under one centrally negotiated agreement. The dual aim of the negotiations is to bring institutional investments in scholarly journal publishing under oversight and control, keeping an eye on reduction, and to drive a transition of scholarly journal publishing to open access.

Within this perspective, it has been underlined how institutions and publishers should cooperate in order to achieve a fully open system of scientific publishing, with sustainable costs for the institutions and fair profits – competitive, not monopolistic – for the publishers. In light of this, the UNIVAQ Library System is committed to accelerating the transition to Open Access within its academic community thanks to its policy of developing and promoting its electronic bibliographic collections, as well as the subscription of contracts providing authors affiliated with the University of L'Aquila benefits for publishing OA. From that standpoint, it's notable that besides the academic and societal benefits that come from making the latest peer-reviewed research available for scientists and citizens, transformative agreements create the preconditions necessary for systemic change in scholarly communication.

Moreover, the transformative agreements introduce cost transparency and place value on service levels rather than access. They should "transform" and lead to models allowing OA to be a means to make the scientific dialogue and research transparent, efficient, public, and accessible to everyone. During the discussion session, it was also given to participants the opportunity to ask questions, make suggestions and critical remarks concerning technical issues, support for study, teaching and research activities, and information about how to benefit by quality-related and transparent open science practices. Furthermore, the cycle of seminars has been bolstered by two on-base visits to the Human Science Department Library and to the Library of the Department of Civil, Construction-Architectural and Environmental Engineering.

The second day gave our partners deeper understanding of the Open Science principles and elements offering technical information about the development of Open Science and its dissemination accessible to all levels of society. The first contribution, performed by the Associate Professor in Structural Engineering Angelo Aloisio, disclosed a critical analysis of the concepts of Open access and Open Science in research. The professor trained partners on Open Access referred to as the practice of making research publications freely available to everyone underlying how its core idea is to remove barriers to scholarly work and allowing anyone to read, share, download and use researches and articles. In this regard, it has been underlying the importance of an adequate understanding on the pros and cons of Open Access.

Mainly, among the benefits of Open Science it has been reiterated the increased visibility of works at an international level, the public access to findings and data, as well as the higher research rates. The larger exposure to free information and research materials leads to several advantages for everyone contributing to a more efficient research and innovation, a better information supply, a greater "findability" and long-term access of knowledge and new methods. It has to be considered how, especially in developing countries, practitioners can use and apply the outcomes and researchers can get information and free access to publications and research materials.

Open Science fosters and promotes a richer, more transparent and much more equal research culture. However, the training has only been a moment to reflect and consider the barriers and concrete challenges of Open access, mostly linked to the quality control, financial model (especially for Gold Open Access where authors pay), and to the risk of "predatory publishers". Within this perspective, it has also been introduced the concept of "bibliometric crisis" referring to a growing concern in the academic and research communities about the over-reliance on bibliometric indicators, such as the number of publications, citation counts, and impact factors, to assess the quality and impact of a researcher's work.

It has been seen how sometimes institutions – for instance, MDPI (Multidisciplinary Digital Publishing Institute) - promotes accessible open access, but too often the growth does not reflect a real and concrete progress in research. On this point, it has stressed the necessity for a decentralized (i.e.

federated), resilient, evolvable network, based on open standards that allow seamless movement from one provider to another, under the governance of the scholarly community. According to the League of European Research Universities (LERU), what is really needed "is the development of an open, inter-connected, publicly owned infrastructure".

The second contribution, made by the Dr. Ciro Marziliano, analysed the importance and the functionalities of IRIS (INSTITUIONAL Research Information System), a Research Product Repository allowing the archiving, consultation and valorisation of outcomes resulting from research activities. This integrated system is able to communicate with national and international central systems for the management and dissemination of publications, in compliance with the Italian standards and the European Commission for Open Access. The repository is based on the international technology platform called DSpace. Since 2015, the University of L'Aquila has been using IRIS as repository of its staff's research products. It has been assessing how through IRIS the university staff can monitor and keep up to date on what has been uploaded, and if necessary, to take corrective actions, or additionally extract data and do statistics from the research activity.

During the last-session of conference, we saw the contribution of the Italian Professor, Francesco Tarquini, on Open Data and the attempts to make every step of the scientific research and process as open and transparent as it can be, so that data and outcomes can be freely usable to everyone. It examined the principles of open science, summarized in the acronym FAIR (Findable, Accessible, Interoperable, and Reusable) and how the adoption of these principles bring several advantages to the whole community, such as accelerate growth, social and economic innovation and responses to common goal issues, or further increase the sustainability of research and the reduction of potential frauds and data manipulations. It aims to make research more open to participation, revision or refutation, refinement and re-use, for the benefit of all.

It has been observed how opening process concerns the entire scientific process, from project planning to the formulation of a hypothesis, from the collection of data, evidence and evidence to their analysis, from the definition of a thesis to the conclusions, to obtain greater sustainability, rigor and responsibility for research. In details, it has also been analysed the main tools of Open Science, such as use machine-readable formats, e.g. Jupiter or CoCalc, share the software, e.g. GitHub, try open peer-review, e.g. PubPeer or F1000, share notes or laboratory notes, e.g. Open Notebook Science, or still share research projects, e.g. RIO Journal.

Conclusion

During the three-day Training sessions at the University of L'Aquila partners and team leaders have been the chance to deeply understand the role and functions of UnivAQ library systems, its intuitive platforms, tools, and services, along with the main Open Science concepts, principles and overlapping issues. The participants were able to critically observe how the Italian case works compared to the library and information systems of the Azerbaijan universities, as well as to

reflect and figure out the pitfalls, challenges and possible solutions of Open Science.

The training contents were for all a moment of significant food for thought which strengthens the cooperation and collaboration among different partners working interactively within a multicultural arena to achieve common goals and shared objectives. Moreover, the different approaches and presentations set up on Open Science by the several spokespersons have given to partners the golden opportunity to examine the benefits and risks of the Open Science and its related-issues and practices. All participants were deeply trained on the main principles and approaches of Open Science, Open Data, Open Access in order to make every single step of the scientific process open, inclusive and fair, so that data and results are freely readable, usable and reusable by everyone.

Within this perspective, it has been understood that the importance of a transition to a more efficient, transparent, and a barrier-free access to scientific research and knowledge can lead to numerous benefits, but also significant risks that are likely to affect those who carry out the research activities, and mainly early career researchers. It has been pointed out how, while Open Access is specifically about making research publications available without barriers, Open Science is a broader approach that encompasses not only publications but also data, methodologies, peer review processes, and open educational resources. Both are integral to the evolution of how scientific research is conducted, shared, and used and reproduced today.

The training has confirmed the necessity of replacing traditional journals and practices with a decentralized, transparent, evolvable network that is interconnected by open standards and open-source norms under the governance of the scholarly community. Even the EU Council, has claimed for a much more transparent, equitable, and open access to scholarly publications. The Council in fact, has encouraged the Member States and the Commission to invest in and foster interoperable, not-for-profit infrastructures for publishing based on open-source software and open standards, in order to avoid the lock-in of services as well as proprietary systems, and to connect these infrastructures to the EOSC.[1]

To conclude, concerning the Azerbaijan case, the limited circulation of scholarly publications has 'crafted' a framework for an internal debate on finding a proper way of fashioning out a working method of disseminating scholarly research in developing countries (in general) and in Azerbaijan (in particular). As a result, the training has also aimed to balance the global information equation up and improve the visibility and impact of Azerbaijan research outputs.

Objectives and Best practices:

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[1] Council of the EU. 2023 Council calls for transparent, equitable, and open access to scholarly publications. Council of the EU. See https://www.consilium.europa.eu/en/press/press-releases/2023/05/23/council-calls-for-transparent-equitable-and-open-access-to-scholarly-publications/

- to develop research capacity, tools and technical knowledge through institutional repository network in Azerbaijan

- to improve the management, visibility, and accessibility of scientific research outputs - research results, reports, publications, datasets, software, etc. – in Azerbaijani HEIs by establishing new or enhancing existing Open Access Institutional Repositories (OAIRs)

- to significantly increase the quality of research in Azerbaijan in general and in universities, taking into consideration copyright and plagiarism issues, providing quality education support

- to enhance research capacity through institutional repository network designed to provide HEIs in Azerbaijan with dedicated and configured repository hardware as a major step towards realisation of the DIRNA.

- to train partners through educational and training materials and expertise about the issues and practices of Open Science, supporting the Azerbaijani Universities' teaching, research, and related activities;

- to define the strategic program of the next Summer School and the advanced trainings on research data and research outputs management

- to keep-update on the DIRNA website to create a teaching and learning database for inclusive education

- to reinforce the transnational cooperation in policy development, strengthen the cooperation among partners and sharing constructive feedback and suggestions

- to build up the adequate expertise and knowledge concerning library system, open access and open data working together to achieve a common goals

- best practices approaches to embed into existing frameworks within their institutions, to disseminate findings widely across their institutions, and thus provide a high level of impact

- to enhance inclusive practices and interventions which reflect and promote inclusive cultures and policies through numerous aspects, with a particular focus on students with disabilities to promote any possible connections between the project participators in the field of inclusive education

- to promote best practices in research output management, preparing training materials and training plan, delivering introductory trainings for research output repositories, as well as a workshop for building digital collections

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