CREATING A CLOUD ORIENTED OPEN SCIENCE INFORMATION AND EDUCATION PLATFORM

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Abstract

The provision of open science is defined as a general policy aimed at overcoming the barriers that hinder the implementation of the European Research Area (ERA). An open science paradigm seeks to capture all the elements needed for the functioning of ERA: research data, scientific instruments, ICT services (commication, calculations, platforms, and specific studies such as portals). Managing shared resources for the community of scholars maximizes the benefits for a society. As for digital infrastructures, this has already demonstrated great benefits. It is expected that applying this principle to an open science process will improve management by funding organizations in collaboration with stakeholders through mechanisms such as public consultation.

The study deals with the concept of open science. The study aim is to analyse the conceptual body, principles, and features of the formation and development of the cloud-based educational and research open science platform. The objective of the study is to determine the prospects of cloud technologies use to support educational and scientific activities and to outline the principles and technologies of open science use and explore their broader application in pedagogical systems of higher educational institutions. The research methods are the analysis of official international documents, publications on the research, observation, comparison, the analysis of the experience of the educational and scientific application of cloud technologies, and experimental studies. The results of the research substantiate the *cloud-based learning and research environment (CBLRE)* of a higher education institution as the environment in which the virtualised computer-technological (corporate or hybrid-based) infrastructure is purposefully built for the realisation of computer-procedural functions (such as content-technological and information-communication functions). The cloud-based educational platform is considered as the set of the cloud-based tools to support different learning and research activities. The integration of resources and services into a single, cloud-oriented educational environment contributes not only to improving the efficiency of access to the necessary tools; it enables the use of advanced training technologies, big data processing tools, and other sources of open education and science. The use of the cloud-based technologies in building an IT-infrastructure ensures CBLRE performance and efficiency.

Conclusions and recommendations encompass the application of cloud-based open science technologies covering European research infrastructures, scientific and educational networks, European open science cloud, and also cloud services for collecting, submitting and processing data as an actual and perspective trend for the development and modernisation of the learning and research environment of higher education institutions.

Keywords: European Research Area, ERA, open science, cloud-based learning and research environment, CBLRE, scientific application.