Shared Science and Knowledge
Open Access, Technology and Education

Ciencia y saber compartidos
Acceso abierto, tecnologías y educación

Guest Editors

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Focus

Scientific knowledge and open innovation offer a potential source of development for countries seeking to meet the needs of the present day. To the degree that knowledge can be shared and freely accessed, a collaborative and interdisciplinary approach to the building of communities can be promoted. Technologies in combination with open access offer new opportunities for education to add value to the academic community, institutions, organizations, associations and to the general public.

MOOCs have become a reference point for open education, and they have democratized the learning process, although with the pending issues of the widespread integration of innovative pedagogic strategies, including gamification, learning challenges, the use of open educational resources (OER), etc., in order to enrich the social and individual learning experience provided by MOOCs.

On the other hand, living laboratories offer a new vision of open development, providing spaces, which stimulate creativity through collaborative work in learning activities, which, at the same time, address a social problem or need. Collaborative creativity is the principal means of achieving open
science, driven by a range of organizations, such as universities, governments, companies, social organizations, and citizens themselves. Within the open education movement new ways of generating science are appearing, through open practices, academic networks, and integration of open educational resources in a range of areas (eLearning, bLearning, mLearning, face-to-face). Open access repositories then become the central component of a technological ecosystem that facilitates integrated management of the life cycle of open scientific knowledge.

The aim of this special issue is to promote shared scientific research and knowledge, providing examples of open access, technology and education. These examples analyze how collaborative work generates new possibilities for the development of science, and offer case studies of the success of open access and the challenges encountered in creating new educational opportunities, open practices, technological resources, academic networks and studies of the open co-creation of knowledge.

**Themes**

- Innovative academic practices for the development of the open educational movement: teaching, research and open publication.
- Architectures of technological ecosystems for the co-creation, dissemination and discovery of open scientific knowledge.
- Practices of communication and interaction involved in the social construction of massive open online learning.
- Organizational methods for the evaluation of social learning in in massive open online learning environments.
- Open educational programs: the role of teachers, participants and the community.
- Mediating elements in open, collaborative and interdisciplinary education.
- Innovation strategies that promote open learning, such as gamification, challenges, projects, problems, learning based on innovation, and evidence-based learning, among others.
- Living and social laboratories, communities for the collaborative construction of knowledge, as examples of successful open innovation.
- The integration of a range of social entities and organizations in the development of open science, using disruptive academic practices and technologies, in order to promote the open access movement.
- Open platforms to manage, reveal and discover scientific outcomes.
- Alignment of design strategies in accordance with the experience of potential users.

**Questions**

Some of the questions and reflections addressed by the themes of this special issue address are:

- The open educational movement enables educators to innovate in their teaching and research practice. How does the open education movement support practice in teaching, learning and research? What competences need to be developed? What challenges does the movement face in constructing shared knowledge?
- Innovative strategies have gained ground, not only in education institutions, but also in professional, social and cultural education. They have become a means of developing competences and of motivating students. Nevertheless, work on the inclusion of these strategies in MOOCs, and on the measurement of the effectiveness of MOOCs, is still at an early stage. How can we ensure that these strategies generate the social construction of knowledge?
How can their impact on motivation be measured more rigorously? What mediating factors, including the role of the teacher, are to be considered in a massive course?

- The third mission of universities is oriented towards both knowledge transfer and social action. Many higher education institutions are seeking innovation spaces in which the co-creation of knowledge is the principal leitmotif, as is the case in citizens’ laboratories. How can interdisciplinary work towards the collaborative construction of knowledge be coordinated? How is knowledge being developed in living laboratories for innovation? Are they hoped for results forthcoming, in terms of the co-creation of knowledge and open innovation in open social laboratories?

- The infrastructure used to implement open access repositories should be linked to standards for the measurement of science, should incorporate the experience of users, and requires appropriate management of the information, which facilitates the use of indicators and metrics. How can disruptive advanced technologies be identified that could promote the development of the functionality of technological ecosystems whose purpose is to preserve, publish and disseminate the scientific activity of institutions? What management model could reinforce the implementation of open access initiatives, and the range of open access practice in institutions?

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