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## INTRODUCTION TO THE SPECIAL ISSUE / INTRODUCCIÓN AL MONOGRÁFICO /

# Open Education and Open Science: New Perspectives for Innovation and Collaboration Ciencia Abierta y Educación Abierta: Nuevas perspectivas para la innovación y la colaboración

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**Abstract:** In the current ecosocial and political context—marked by profound transformations in ways of living, learning, and conducting research—this RELATEC monographic issue emerges as a plural space for pedagogical and epistemological reflection. It brings together eight contributions focused on education as a domain of social transformation, integrating approaches such as open science, participatory methodologies, collaborative networks, and emerging technologies. These contributions originate from the First Ibero-American Meeting on Open Science and Open Education (Montevideo, 2024), organized by the DAI and REUNI+D networks, as part of the LACLO 2024 event. The articles explore experiences and research aimed at fostering a critical and engaged global citizenship. They address institutional challenges to implementing open science in Europe and Spain, emphasizing the need for regulatory coherence, inter-institutional collaboration, and specific training. The JIRG model is introduced, positioning youth as researchers of global challenges, along with Global Quest, a co-designed educational game that encourages youth engagement in sustainability, diversity, and rights. Other contributions include a citizen science initiative on biodiversity in Brazil, an analysis of collaborative networks between universities and schools, the application of generative artificial intelligence in research training, and a critical review of the eduCAPES open educational resources portal. The issue concludes with an examination of data repository quality in educational research based on the FAIR and TRUST principles. Altogether, this monographic issue proposes a reconfiguration of the relationship between science, education, and society, promoting open, inclusive, and socially engaged practices that support meaningful knowledge creation and transformative action

**Keywords:** Open Science, Research Networks, Universities, Institutional Cooperation.

**Resumen:** En el contexto ecosocial y político actual, caracterizado por profundas transformaciones en los modos de habitar, aprender e investigar, este monográfico de RELATEC se presenta como un espacio plural de reflexión pedagógica y epistemológica. Reúne ocho contribuciones centradas en la educación como ámbito de transformación social, con enfoques que integran ciencia abierta, metodologías participativas, redes colaborativas y tecnologías emergentes. Estas propuestas surgen del Primer Encuentro Iberoamericano de Ciencia Abierta y Educación Abierta (Montevideo, 2024), organizado por las redes DAI y REUNI+D, en el marco del evento LACLO 2024. Los artículos abordan experiencias e investigaciones orientadas a fortalecer una ciudadanía global crítica y comprometida. Se analizan los desafíos institucionales de la ciencia abierta en Europa y España, destacando la necesidad de coherencia normativa, colaboración interinstitucional y formación específica. Se presenta el modelo JIRG, que sitúa a jóvenes como investigadores de retos globales, y experiencias como Global Quest, un juego educativo diseñado colectivamente para fomentar la participación juvenil en temas de sostenibilidad y derechos. Otras aportaciones incluyen una iniciativa de ciencia ciudadana sobre biodiversidad en Brasil, el análisis de redes colaborativas entre universidad y escuela, el uso de inteligencia artificial generativa en la formación investigadora, y una mirada crítica al portal de REA eduCAPES. Finalmente, se examina la disponibilidad y calidad de los repositorios de datos educativos según los principios FAIR y TRUST. En su conjunto, este monográfico propone una reconfiguración del vínculo entre ciencia, educación y sociedad, promoviendo prácticas abiertas, inclusivas y comprometidas con la transformación social y el conocimiento significativo.

**Palabras clave:** Ciencia Abierta, Redes de investigación, Universidades, Cooperación institucional.

Within the contemporary ecosocial and political context that deeply questions how we inhabit, learn, and conduct research, this special issue is conceived as a plural space for pedagogical and epistemological reflection. It brings together eight contributions focused on education as a domain of social transformation, putting into dialogue approaches from Open Science, participatory methodologies, collaborative networks, and emerging technologies, all oriented toward strengthening a critical, engaged global citizenship.

The body of work assembled here has its genesis in the Primer Encuentro Iberoamericano de Ciencia Abierta y Educación Abierta (First Ibero-American Meeting on Open Science and Open Education), held in October 2024 in Montevideo (Uruguay) as a satellite event of LACLO 2024. The meeting was jointly organized by DAI, the «Red de Datos Abiertos de Investigación» and REUNI+D, the «Red Universitaria de Investigación e Innovación Educativa. Conectando Redes y Promoviendo el Conocimiento Abierto» (Spanish Ministry of Science, Innovation and Universities; State Research Agency, RED2022-134187-T).

The contributions presented here share a concern for generating knowledge in open, inclusive, and meaningful ways, recognizing the participation of subjects—especially young people and educational communities—in its construction. From diverse geographic and disciplinary contexts, the authors explore methodological tools, institutional dilemmas, and concrete experiences that aim to reconfigure the relationship among science, education, and society.

The article by Gewerc and Anguita situates the debate at the institutional and political level by analyzing the implementation of Open Science in Europe and Spain, with particular attention to the activities of the REUNI+D network. Using a mixed-methods design, the study explores perceptions, knowledge, and obstacles faced by educational research groups as they move toward more transparent, collaborative, and accessible models of scientific production. The authors call attention to regulatory fragmentation that hinders the coherent development of Open Science policies, and propose an articulation based on the «three Cs»: Coherence, Collaboration, and Coordination. The work highlights the need for targeted training for the research community and makes visible the tensions among technical, cultural, and institutional dimensions that demand an integrated approach.

The contribution from Calvo, DePalma, Rodríguez-Hoyos, and Hevia reinforces the central role of young people in processes of educational transformation by presenting the JIRG methodological process (Personas Jóvenes como Investigadoras de Retos Globales—Young People as Researchers of Global Challenges) as a way to foster youth engagement in global citizenship. Structured in ten stages inspired by the «students as researchers» movement, the model enables young people to identify concerns, formulate questions, and propose concrete solutions to challenges that affect them. Its commitment to dialogic, horizontal methodologies foregrounds youth voice as a legitimate source of knowledge, challenging traditional models of teaching and research. The approach promotes connections between the local and the global and reasserts the transformative role of open educational practices.

The collaborative work by Braga, Fueyo-Gutiérrez, Fano-Méndez, and Valdez-Argüelles opens the collection with a powerful ludopedagogical proposal: «Global Quest», a collaborative game co-designed within the frameworks of citizen science and

education for global citizenship. Implemented with more than 400 adolescent participants and socioeducational professionals, the game demonstrates its capacity to elicit young people's perspectives on issues such as diversity, sustainability, and rights, while also generating dynamics of critical reflection and inclusion. Beyond its didactic function, the game is conceived as a research tool—an exemplary case of the creative potential of co-investigation in educational settings. Methodological and epistemic openness here is the condition of possibility for imagining new forms of youth participation.

The contribution by Lima and Catafesta extends this perspective through a concrete experience of citizen science and environmental education on the campus of the Universidade Federal de Santa Catarina (UFSC). By co-creating a campus bird field guide in collaboration with both academic and external community members, the project mobilized practices such as field outings, curation of photographic records, and the development of descriptive content. Use of the iNaturalist platform broadened the project's reach and connected local knowledge with global Open Science infrastructures. Beyond outcomes related to biodiversity and conservation, the experience underscored the transformative power of citizen participation in strengthening the bond between science and territory.

The study by Ocaña, Leite, Del Río, and Martagón focuses on analyzing collaborative networks between universities and schools across diverse contexts: learning communities, pedagogical laboratories, and rural settings. Through a multicase study, the authors illustrate ways of generating pedagogical knowledge from critical, democratic, and transdisciplinary perspectives. These networks not only enable the design and implementation of innovative educational practices, but also support the transfer of learning beyond academic spheres, directly impacting institutional improvement processes. The work brings to the fore the value of relationships, dialogue, and inclusion as foundations of an educational research agenda committed to social transformation.

The article by Antúnez dos Santos and Berni Reategui brings emerging technologies into the arena of research training by exploring the combined use of word co-occurrence analysis and Generative Artificial Intelligence (IAGen) to support scoping design in higher education projects. Based on personalized reports, the intervention enabled university students to reflect on keyword definition, refine their literature searches, and strengthen their research autonomy. The findings suggest that such tools can enrich metacognitive processes and facilitate the conceptual structuring of early-stage projects—especially when coupled with appropriate pedagogical mediation.

From Brazil, the article by Damiaty and Amiel offers a critical analysis of the «eduCAPES» portal, the principal instrument for promoting Open Educational Resources (OER) within the Universidade Aberta do Brasil (UAB). Through a multidimensional lens—documentary, technical, and conceptual—the authors identify obstacles to the portal's consolidation, including lack of institutional identity, tensions among stakeholders, and weak strategic alignment. The study concludes that OER cannot be reduced to technical questions of functionality; rather, they must be anchored in a political project that recognizes openness as an organizing principle. Integrating repositories into public educational policies requires a structural perspective that combines participatory governance, conceptual coherence, and sustained institutional commitment.

The closing article, by Torterolo and Motz, offers a critical look at data repositories in educational and social science research, analyzing their alignment with the FAIR and TRUST principles. Drawing on methodological triangulation (literature review, expert interviews, and catalog analysis), the study identifies a troubling scarcity of specialized repositories in these disciplines compared with other areas of knowledge. The authors underscore the importance of criteria such as reputation, ease of use, sustainability, technical support, and the availability of contextual information, along with proper ethical protection for sensitive data. The study argues that repositories have ceased to be mere deposit sites; they have become strategic infrastructures for Open Science whose quality must be assessed through robust technical, legal, and epistemic frameworks.

Taken together, the articles in this special issue constitute a plural cartography of emerging practices that seek to transform how we conduct research and educate in contemporary times. Through innovative methodological proposals, institutional analyses, participatory experiences, and technological developments, they articulate a horizon in which openness, collaboration, and inclusion are not merely normative principles but ethical-political foundations of an active global citizenship.

Far from limiting itself to a technical review of tools or policies, this collection invites us to think of education and research as territories of dispute, imagination, and collective creation. Across local, national, and transnational scales, it reaffirms the possibilities of generating meaningful knowledge in dialogue with communities, contexts, and real-world challenges. This special issue, therefore, does more than document progress—it issues a call: an invitation to transform.