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EDITED AND REVIEWED BY
Terrell Lamont Strayhorn,
Virginia Union University, United States

*CORRESPONDENCE
Patricia Caratozzolo
✉ pcaratozzolo@tec.mx

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Editorial: Education and society: new approaches for new challenges

Patricia Caratozzolo*, Jorge Membrillo-Hernández and
Genaro Zavala

Institute for the Future of Education, Tecnológico de Monterrey, Monterrey, Mexico

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Editorial on the Research Topic

Education and society: new approaches for new challenges

The requirements of the Fourth Industrial Revolution exert intense pressure on the educational community to create what is currently called Education 4.0: a driver for the twin transformation -digital and green- of society, capable of facing challenges with flexible strategies with personalized offers for lifelong learning, the development of Global Citizenship, and an unwavering commitment to Diversity, Inclusion, and Equality. Research in Socially-Oriented Education (SOE) currently represents one of the best strategies for the sustainable solution to humanity's most pressing problems: poverty reduction, coordinated response to natural disasters provoked by climate change, and ensuring peace by providing clean water and energy to the most vulnerable communities.

This Research Topic contains an exciting selection of studies on SOE innovative initiatives, related not only to successful experiences of pedagogical approaches for Higher Education (HE) but also to proposals for upskilling and reskilling strategies to improve employability within the framework of Industry 4.0. and beyond. To what extent can education be a pivotal instrument to confront society's disruptive challenges? How can educational institutions leverage the COVID-19 response experience to reduce the social, environmental, and economic impacts of unforeseen Global Risks? These were some questions that we, as Guest Editors, asked the STEM academic community. The Research Topic was good enough to relate the concepts of education applied to urban development, the social accountability of dentistry and medical sciences education, and even the use of education as a tool for social transformation.

Social Accountability (SA) is a new paradigm in dental and medical education and must be addressed in the relationship between society, culture, and education. Interestingly, this Research Topic had two contributions related to this matter: on the one hand, [Masud et al.](#) evaluated the perception of SA among students at King Saud bin Abdulaziz University for Health Sciences (KSAU-HS), in Riyadh campus, Saudi Arabia. The study concluded that medical students exhibited profoundly different perceptions of SA, depending on whether they were in the preclinical year or the last year; on the other hand, [Imani et al.](#) delved into the SA process in the Iranian dental education system. The results indicated that the SA process has essential and practical requirements in the antecedent, mechanism, and result stages and performs well in meeting the current needs of society for dental services.

[Berliner and Hecla](#) presented a complete study on nuclear engineering and physics history, development, and particularities. The authors explain the origins of the nuclear field and the scientific and political implications, aiming to demystify and uncover the falsehoods that usually accompany teaching courses related to nuclear sciences in university programs.

[Sankaran and Saad](#) analyzed how the academic training programs for educators in Malaysia should be modified by bringing the trainers of the Faculty of Education closer to social training that can bring them closer to society.

[Campos, Hidrogo et al.](#) suggest that using virtual reality (VR) in classes can improve the cognitive process of abstract concepts, placing VR as an essential element to increase the acquisition of complex ideas in STEM careers. The study includes a comprehensive literature review on cutting-edge innovations in educational technology and provides numerous details of the methodology, instruments used, and data analysis. The detailed description of the methods and the results make this study a valuable source for replicating the experiment.

[Ponce-Lopez et al.](#) reflect that education is society's primary driver of innovation. The authors highlight the importance of sustainable cities having spaces designated as Innovation Districts since jobs are created in these spaces, and they promote new markets specialized in products and services with high added value. In this way, cities in rapidly industrializing developing countries can maximize their chances of success by fostering explicit collaboration between industry and educational institutions.

[Ventura Roque-Hernández](#) stated the importance of inter- and trans-disciplinarity in the promotion of a culture of peace, and they presented some examples of initiatives that aimed at cultivating a culture of peace from different areas of knowledge, education, and research, regardless of discipline.

[Márquez Cañizares et al.](#) studied the importance of the idea-generation process in HE, specifically in engineering programs. The authors explain the application of the Ideation, Categorization, Regrouping, Ideation (ICRI) method and the importance of its implementation during the years 2020 and 2021 when COVID-19 forced HE students to take all courses virtually. The ICRI method allowed students to gather and develop creative proposals in virtual contexts to solve problems systematically. The findings showed a positive evaluation by the students, which is why it is considered that the ICRI method could be implemented in other virtual collaboration contexts, for example, in international research teams.

[Hadi et al.](#) proposed to study the attitudes related to the spirituality of students and their psychological and cognitive inclinations. The findings showed the importance of spirituality as a driver of the physical and mental wellbeing of the students. One of the study's main findings was that college students who actively participated in spiritual rituals tended to reinforce habits and attitudes related to entrepreneurship skills. The results of this study may be inspirational for business education programs and business incubators that the Indonesian government proposes to implement in the future.

[Ramaditya et al.](#) conducted a detailed study of the performance indicators of various private HE institutions in Southeast Asia. The authors analyzed why universities

perform poorly in the QS World University Ranking despite government initiatives and funding programs. The study's results indicate that the talent shortage originates from poor talent management. This article offers guidelines for improvements in organizational transformation to maximize the performance of graduates to create a competitive advantage.

There were also some reflections on the impact of COVID-19 on education and society: [Moser-Mercer et al.](#) developed a method for evaluating the EdTech platform, taking into account the authors' experience during the COVID-19 pandemic and explaining how this educational tool was crucial for remote teaching during the closure of schools and universities. The authors describe the humanitarian actions in Jordan and the methodology used—Participatory Action Research (PAR)—to create community educational experiences among young refugees; [Dickson et al.](#) mainly analyzed how it affected the work of teachers and the development of learning processes in children and adolescents. The authors examined the impact on the professional performance of those academics who had to exercise parenting responsibilities alongside their academic role, the difficult challenge of working from home without a dedicated academic career, and how this affected their performance in research processes and dissemination of results in scientific journals. [Campos, Daruich et al.](#) analyzed a Student Teaching Assessment (SET) survey conducted at their institution during and after the COVID-19 pandemic. The results showed that the COVID-19 pandemic didn't affect the assessment scores, which allowed them to identify the most assertive strategies most accepted by the students.

The improvement in the relationships between educational institutions and society represents an imperative of the 21st century: universal and globalized education that helps citizens solve the world's problems responsibly and sustainably. The potential link between education and society shows that the challenges for the future of educational programs have to be designed for a social transformation that improves the understanding of nature to transform it. The international experts who shared their studies and opinions on this Research Topic showed us that Higher Education can potentially become an agent of change for a more diverse, equitable, and egalitarian Society.

Author contributions

PC: Conceptualization, Funding acquisition, Supervision, Writing—original draft. JM-H: Conceptualization, Supervision, Writing—review and editing. GZ: Conceptualization, Supervision, Writing—review and editing.

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Conflict of interest

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