

A makeshift editorial

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This tenth issue, **Education and Sustainability**, addresses a topic that is of key importance to UNESCO's objectives and one of the main original concerns of our Chair, which was then referred to as "training the technicians of the future". It also tackles the need to humanise the education of technologists. As a technical university, we have always sought to find ways of contributing to sustainability through the education of technologists.

This issue contains five articles written by people who are linked, to a greater or lesser extent, to UNESCO Chairs in Spain and Latin America. In short, it recognises the notable role that the UNESCO Chairs have played in education.

The first article in this issue is "Sustainable Development as an Essential Aspect of Environmental Education", by M^a Ángeles Murga and María Novo (from the UNESCO Chair in Environmental Education and Sustainable Development of the National University of Distance Education, UNED, Spain). The authors describe in detail how sustainable development has become an essential aspect of environmental education as conceived of today. They also examine the main characteristics of the sustainability model, which serves as a foundation for educational and environmental processes; the concept of development; the role of science and technology; the economy; globalisation; and challenges to equality. All of the latter was examined in the context of the United Nations' Decade of Education for Sustainable Development, which is promoted by UNESCO.

Yazmín Cruz, a doctoral student at the UPC's UNESCO Chair of Sustainability, who currently works for the Global University Network of Innovation—a UNESCO network headquartered at the UPC—addresses the key topic: "Accreditation as a Mechanism for Ensuring the Social Commitment of Universities". According to Yazmín Cruz, quality is a social construct and, as such, requires reflection, discussion and group effort. Higher education cannot turn in on itself. Instead, it must contribute to eradicating poverty, intolerance,

violence, illiteracy, famine and disease. In addition, it must contribute to promoting development, knowledge transfer, solidarity, universal respect for human rights, democracy, gender equality and a culture of peace. In this context, the most important criterion for assessing and accrediting the quality of higher education is relevance. In addition to technical and scientific criteria, educational quality must include the concept of social relevance and respect the main principles of ethics and citizenship education.

In his article entitled “Educating Engineers in Sustainability. Why? What? How?”, Jordi Segalàs, a lecturer from the UPC’s UNESCO Chair of Sustainability, analyses the role of higher education in training professionals to attain a more sustainable future. He studies the curricular offerings of a number of technical universities and the reasons why they incorporate sustainability education as a central part of their courses. In addition, he assesses the skills, knowledge, abilities, attitudes and values that should be gained by following the syllabuses offered at various universities that train engineers. Finally, he discusses how to successfully attain skills in sustainable development through different pedagogical strategies.

In their article “The Relationship between University Students’ Knowledge and Attitudes to Sustainability”, Miren Onaindia and Arantza Ibabe, from the Chair on Sustainable Development and Environmental Education at the University of the Basque Country (UPV), present the results of a study carried out at their university that aimed to analyse students’ knowledge and attitudes to sustainability. The attitudes of technical engineering students were compared with those of social sciences students. The students were found to have different perceptions of environmental problems according to their specialisation. Social sciences students had the most active positive attitudes to sustainability. For example, they recognised the need for a change in lifestyle, despite the fact that these students had less knowledge of the problems and of the theoretical concepts of sustainability. The authors conclude that an awareness of environmental problems is not directly related to a willingness to seek solutions. Finally, they propose that to foster more active student attitudes, it is important for universities to devise syllabuses with more interdisciplinary subjects.

In his article “Methods and Experiences of the FLACAM in Educating Agents of Change for Sustainability in South America”, Ruben Pesci of Argentina’s UNESCO/FLACAM Sustainable Development Chair, presents the extensive

and innovative teaching experience of this Latin American chair in the field of postgraduate education. The article describes the paradigm shift as it gradually became consolidated in the FLACAM, through epistemological, pedagogical and didactic advances. It also gives a comprehensive but concise picture of this cultural and scientific movement, which started to have an impact on sustainability 20 years ago. The environmental planning process is at the heart of the FLACAM's basic strategy, which considers that positivistic linearity should be replaced by a helicoid that can flexibly tackle the complexity and changeability of complex processes. Learning how to manage this helicoid by controlling its input and output without losing the impetus to attain the desired result, whilst preventing the process from stopping or expanding uncontrollably, is the main strategy in this methodology.

Finally, in his article entitled "Environmental Education Experiences in Biosphere Reserves," Josefa Martínez Huerta, from the Urdaibai Biosphere Reserve and collaborator of the UNESCO Chair on Sustainable Development and Environmental Education at the UPV, states that regions with biosphere reserves play an active role in sustainable development education. This is because their target is to try out general models and establish operational instruments that function in specific realities. An analysis of different successful experiences in biosphere reserves shows that several characteristics or factors determine success and can be applied to other places. Such characteristics include treating environmental education as a social process, integrating education and management, promoting participation, and recognising the local community's leading role. Finally, the article addresses various specific experiences at Urdaibai.

We hope that this special edition of the *Sostenible?* journal contributes to meeting the objectives of the United Nations' Decade of Education for Sustainable Development, which is promoted by UNESCO.