The Nuclear Energy Museum in Brazil: Creative Solutions to Transform Science Education into Meaningful Learning

Authors : Denise Levy, Helen J. Khoury

Abstract : Nuclear technology is a controversial issue among a great share of the Brazilian population. Misinformation and common wrong beliefs confuse public’s perceptions and the scientific community is expected to offer a wider perspective on the benefits and risks resulting from ionizing radiation in everyday life. Attentive to the need of new approaches between science and society, the Nuclear Energy Museum, in northeast Brazil, is an initiative created to communicate the growing impact of the beneficial applications of nuclear technology in medicine, industry, agriculture and electric power generation. Providing accessible scientific information, the museum offers a rich learning environment, making use of different educational strategies, such as films, interactive panels and multimedia learning tools, which not only increase the enjoyment of visitors, but also maximize their learning potential. Developed according to modern active learning instructional strategies, multimedia materials are designed to present the increasingly role of nuclear science in modern life, transforming science education into a meaningful learning experience. In year 2016, nine different interactive computer-based activities were developed, presenting curiosities about ionizing radiation in different landmarks around the world, such as radiocarbon dating works in Egypt, nuclear power generation in France and X-radiography of famous paintings in Italy. Feedback surveys have reported a high level of visitors’ satisfaction, proving the high quality experience in learning nuclear science at the museum. The Nuclear Energy Museum is the first and, up to the present time, the only permanent museum in Brazil devoted entirely to nuclear science.

Keywords : nuclear technology, multimedia learning tools, science museum, society and education