



The Importance of an Online Nuclear Science Center for the Popularization and Public Engagement on Nuclear Science and Technology

R. R. Pereira

r7r7p7@gmail.com, Correspondence Address

1. Introduction

The applications of nuclear energy are more present in everyday life than it's visually perceived¹. From the generation of electricity at nuclear power plants, to the production of radiopharmaceuticals, among other uncountable mediums in which nuclear sciences are actively being used.

Besides that, the same society that enjoys the benefits of the myriad of functions in which nuclear sciences are applied is still very much prejudiced against the use of it. That occurs mainly due to the widespread misinformation gathered throughout the years.

Education and research institutions in the nuclear field of studies must have a more vital and fundamental role on converging efforts for demystifying the area.

On that sense, the objective of this research is to propose the development of an online nuclear science center, named in this project as “Casa da Ciência Nuclear”, where it'll be a place on the internet for presenting to the general public a view of how nuclear sciences are diversely distributed and put to good use, as well as showing the essential laboratories and resources available at a research center.

2. Methodology

For the method proposed in this study, a particular nuclear science institution was to be chosen. Since it's a research conducted at Instituto de Engenharia Nuclear – IEN, this was the one used as the object for the creation of the online nuclear sciences center called “Casa da Ciência Nuclear”. As a basis, the primary activities of this institute are acknowledged and cataloged, as well as other key operations in the nuclear field of studies as a whole and patterns or models, like games, videos, and interactive simulations, that are more attractive and ludic for engaging the general public into nuclear sciences.

The inspiration for the website and the manner the content in it is organized is taken from other existing online science centers throughout the world, for instance the National Museum of Nuclear Science & History¹, National Atomic Testing Museum², among others.

3. Results and Discussion

With all the information collected through the research, the result is the construction of the aforementioned website that hosts different types of media that are linked between them in such a way that a visitor can be

prompted to access and enjoy one after the other, for instructing with a simple language and easy to follow approach for spreading knowledge on nuclear sciences. Some of these said medias, to name a few, are 360 degree virtual tours of some of the most important areas and laboratories at Instituto de Engenharia Nuclear, videogames, informative videos and interactive simulators that present a view on the activities of researchers and engineers.

For the evaluation phase, a form is generated containing a set of specific questions regarding the most important factors of the experience related to using the website and enjoying its content as a whole, for converging opinions on how much the online science center developed in the present project can actually contribute to increasing the knowledge of the population on the matter discussed here. In a first moment, this form is evaluated by the main actors in the Brazilian field of nuclear sciences and then by a sample size of the average public.

4. Conclusions

This research proposes the development of a website that can be arranged in such a way to become an online nuclear science center filled with information configured in an assortment of distinctive kinds of media.

The Instituto de Engenharia Nuclear – IEN is the chosen institution in which data is collected for supplying the science center, in addition to including other interesting ways of disseminating the importance of nuclear studies and its uses in everyday life.

From the creation of this portal on the internet, it's assessed by means of a form, the influence of it on popularizing nuclear sciences and technology, along with taking account of public engagement on the subject.

References

- [1] World Nuclear Association, *The Many Uses of Nuclear Technology*, <https://world-nuclear.org/information-library/non-power-nuclear-applications/overview/the-many-uses-of-nuclear-technology.aspx> (2021).
- [2] National Museum of Nuclear Science & History, <https://www.nuclearmuseum.org> (2020).
- [3] National Atomic Testing Museum, <https://nationalatomicmuseum.org> (2020).