

Didactic guide of the Astronomical Observatory of UFRGS

A contribution to the training of educators in non-formal education settings

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Abstract. This work is carried out at the Astronomical Observatory of the Federal University of Rio Grande do Sul (OA-UFRGS), a national heritage site with 116 years of history, preserving a valuable collection of the history of Brazilian astronomy, more specifically that of Rio Grande do Sul. The OA, which is also a Museum (MOA-UFRGS), serves as a space for cultural and scientific exchange, promoting educational, extension and research activities. To contribute to the training of university students involved in mediating the visits and enriching the public experience, we are developing an educational guide to the OA, initially entitled "*Didactic Guide of the Astronomical Observatory of UFRGS*". This material, which will be available as a booklet, was designed to guide the mediators during their training to receive the visitors, supporting them in their role as facilitators of learning in non-formal environments and encouraging university students' engagement. The guide's topics are based on the history of the OA history and include didactic sequences and interdisciplinary questions related to astronomy. The material's structure is grounded in the educational experience accumulated by the local, the norms of the Brazilian Law of Guidelines and Bases of Education (Law No. 9,394 from 1996), and Critical Theory approaches. In this article, the future perspectives for the use and maintenance of the guide will also be presented.

Resumo. Este trabalho é realizado no Observatório Astronômico da Universidade Federal do Rio Grande do Sul (OA-UFRGS), um patrimônio nacional com 116 anos de história, que preserva um valioso acervo sobre a história da astronomia brasileira, mais especificamente do estado do Rio Grande do Sul. O OA, que também é um Museu (MOA-UFRGS), atua como um espaço de intercâmbio cultural e científico, promovendo atividades educativas, de extensão e de pesquisa. Com o objetivo de contribuir para a formação de universitários envolvidos na mediação das visitas e enriquecer a experiência do público, estamos desenvolvendo um guia educativo para o OA, inicialmente intitulado "*Roteiro Didático do Observatório Astronômico da UFRGS*". Esse material, que será disponibilizado em formato de cartilha, foi projetado para orientar os mediadores durante sua formação para receber os visitantes, apoiando-os em seu papel de facilitadores de aprendizagem em ambientes de educação não-formal e incentivando o engajamento dos estudantes universitários. Os temas do guia são baseados na história do OA e incluem sequências didáticas e questões interdisciplinares relacionadas à astronomia. A estrutura do material está fundamentada na experiência educacional acumulada pelo OA, nas normas da Lei de Diretrizes e Bases da Educação Nacional (Lei nº 9.394 de 1996) e nas abordagens da Teoria Crítica. Neste artigo, também serão apresentadas as perspectivas futuras para o uso e manutenção do guia.

Keywords. Teaching of Astronomy

1. Introduction

The Astronomical Observatory of UFRGS (OA) (see Figure 1), a century-old building and national heritage site, preserves a valuable collection of historical instruments and documents related to the history of astronomy in the state of Rio Grande do Sul, Brazil. Currently, the activities that OA offers to the public include guided tours to the Astronomical Observatory Museum at UFRGS (MOA) during the day and astronomical observations of the night sky from its terrace and dome. The groups of visitors are diverse, including the UFRGS community, the general public, those involved in partnerships to organize cultural events, groups of undergraduate students and its main audience, the elementary and high school students. The OA has a very strong commitment to educational, research and extension activities, focusing on creating an environment for exchanging cultural and scientific knowledge.

In this work, we present the educational guide for the OA, which is envisioned to be used during the training of mediators to welcome visitors to OA. One of the main goals of the guide is to increase the engagement of university students' in OA educational activities, contributing to their technical and civic ed-

ucation, as well as enriching the experience of the public during their visit to the OA.

2. The Educational Guide and Its Objectives

The OA's educational guide, initially called the "Didactic Guide of the Astronomical Observatory of UFRGS" (Didactic Guide OA) (see Figure 2), is envisioned as an essential material for engaging university students and future educators in university extension activities, a key pillar of public universities that plays a crucial role in bridging academia and society. Our guide is inspired by the guide for the Feira de Santana Museum of Sciences (Silva & Poppe 2018), designed with a similar purpose. After analyzing their material, efforts were made to adapt the idea to the OA needs. The guide is produced in the form of a booklet with images, information about the OA collections, and suggestions of narratives that can be used to discuss different historical perspectives, which makes the observatory museum such a special and unique place. Another important aspect of the guide is that it provides suggestions of activities that are envisioned according to the age and profile of the visitors. The guide is intended to serve as a tool for exploring the collection and guiding pedagogi-



FIGURE 1. Facade of Astronomical Observatory of the Federal University of Rio Grande do Sul (OA-UFRGS)

initiative represents a pivotal moment in the historical evolution of the OA.

3. Perspectives

The OA Didactic Guide is currently in progress and expected to be completed soon in its digital edition. The idea is to distribute it among the UFRGS institutes, particularly the Institute of Physics, to motivate the students to engage in public extension activities at the OA. In addition, a feedback form will be proposed to evaluate the interaction between undergraduate students and visitors, and the responses will be used for future adaptations and improvements to the guide.

References

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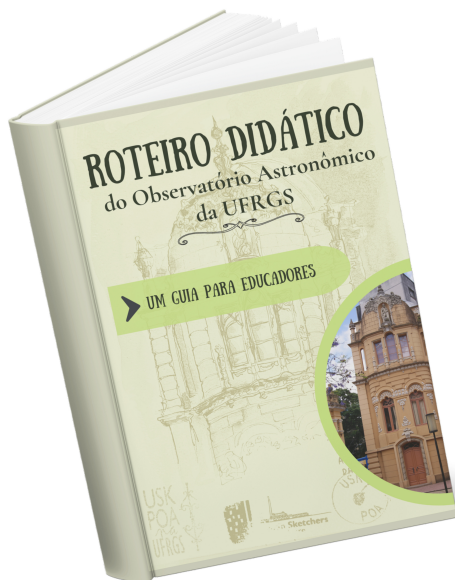


FIGURE 2. Illustrative image of the booklet cover ("*Roteiro Didático do Observatório Astronômico da UFRGS*", in Portuguese).

cal activities, enabling students to make the most of the potential offered by this century-old scientific heritage.

The guide's content is based on the educational experience of the OA staff, which has been accumulated over decades and documented and stored in digital archives. The activities proposed in the guide also rely on the important historical and scientific collections of the MOA. The booklet is aligned with the principles established by Law No. 9,394 of December 20, 1996, which sets forth the Guidelines and Bases for National Education in Brazil, and is also based on Critical Theory. To make the OA heritage site viewed from different perspectives, we propose decolonized narratives by incorporating the idea of the "antimuseum" discussed in the recent article by Alves-Brito & Nunes (2024). This