

Increasing digital literacy in the classroom: the use of the *Programming Historian* in Brazilian and Portuguese universities

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Abstract

The *Programming Historian* is a free platform offering tutorials on the use of digital methods and tools applied to the Social Sciences and Humanities. Launched in 2008 by William J. Turkel and Alan MacEachern, it has been growing in the number of tutorials published, expanding the methods and tools approached (beyond the initial Python programming lessons), as well as in its translation from the English original version into other languages (Spanish in 2016, French in 2019, and Portuguese), reaching a wider global audience.

In this context, the Portuguese version of the *Programming Historian* was launched in 2021, composed of a team of Brazilian and Portuguese scholars, researchers, and students from several academic institutions, thus taking a step forward in the internationalization efforts of the Programming Historian Editorial Board. To this date, with 43 translated lessons and two original ones (and several others on peer review process), the Portuguese-speaking team has consolidated its work and has moved forward trying to apply these resources in the classroom. From the beginning one of the major goals behind this initiative was, and still is, to have translated and published into Portuguese tutorials useful for students and academics. That is why we can justify the priority lessons translated: they relate to Digital Humanities courses' syllabus taught in Escola de Ciências Sociais from Fundação Getulio Vargas (FGV CPDOC, Rio de Janeiro, Brazil) and in the History graduation in Faculdade de Ciências Sociais e Humanas from Universidade Nova de Lisboa (NOVA FCSH, Lisbon, Portugal) - Python programming language, R software, spatial analysis and QGIS, HTML, web publishing and the Omeka platform, among others.

The aim of this paper is to present the experience of the use of the *Programming Historian* tutorials and, particularly its Portuguese version, in Brazilian and Portuguese universities, taking as case studies the courses from FGV CPDOC and NOVA FCSH. On a first moment, we will focus briefly on the initiative of forming and implementing a Portuguese-speaking team, how it was created, how the role of each member was defined within the team (main editor, editors, translators, reviewers, etc.), how it adapted to the *Programming Historian* methods and tools (for instance, the use of GitHub and Markdown), how we address the linguistic diversity within the Portuguese-speaking world, and the search for funding to enable the enrollment of students into the project. Then, on a second moment, we will address the impact of the use of the *Programming Historian* tutorials both in FGV CPDOC and in NOVA FCSH.

The analysis presented was conducted through surveys administered to students from both institutions, starting from the academic year 2021-2022, within the scope of the project “Literacia digital: modelando competências digitais para humanistas e cientistas sociais” [Digital literacy: shaping digital skills for humanists and social scientists], funded by FGV. The students were asked to respond to 15 questions in the beginning of the courses, addressing the status of their digital literacy. We have to consider that, at the start, most of the students had no contact with the mathematical logical reasoning or abstract models, since they were in the Humanities and Social Sciences area in Highschool. Their use of technology was mostly related to social media, showing difficulty in understanding the utility of programming languages. At the end of the courses, the students responded to a new survey, composed of 23 questions, evaluating the evolution of their digital literacy, and the effectiveness of the use of the *Programming Historian* tutorials in the classroom and as a way to autonomously develop skills and knowledge on digital methods and tools. Our final aim is to assess if the tutorials contribute to transforming and improving students’ digital profile and literacy.

In fact, for Portuguese speakers, using the *Programming Historian* tutorials in their native language significantly helps overcoming the linguistic barrier, facilitating both the learning and teaching processes. This became evident through our classroom interactions with the students and through their adhesion to the lessons even outside the classroom context. Additionally, these tutorials enable an easier and more effective dialogue between

students and future researchers with Computer Science specialists. This is achieved by providing a hands-on, step-by-step practical experience with a shared vocabulary that connects available technology with the conventional inquiries, data, and sources used within the Humanities and the Social Sciences. As a result, students become aware of how programming can enrich the research, have a more informed and critical approach to the conception, creation and evaluation of the methods and tools used, and become more prepared, skilled and competitive when entering the job market.