Chapter 6
Using OpenStreetMap as a Source of Religious Mapping Data in an OER Human Geography Textbook

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ABSTRACT

OpenStreetMap (OSM) is a global scale geographic data source produced by individual volunteers and organizations. It is emblematic of two emerging themes in geographical technology: crowdsourcing and open data. One of the main problems with mapping religion at small scales is the lack of good data for representing the religious landscape. OSM provides data on the location of religious structures in the landscape. The dataset contains hundreds of thousands of religious structures that can be mapped, queried, and analyzed. Students often do not understand how mapping data are produced and how the data are refined and manipulated. In this study, students are asked to interact with maps made from the data as well as the data itself and provide their feedback. Open datasets can be used to make useful teaching maps, but they can also be used to help students see the inner workings of data production.

INTRODUCTION

Introduction to Human Geography is a freshman-level, introductory college geography course. It encompasses the study of human activities, both intentional and unintentional, across the Earth. Normal topics in a human geography class include the distributions of industries, languages, diseases, and religions. Generally, Introduction to Human Geography will have course goals similar to the following:

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1. Recognize the relationship between humans and the Earth.
2. Identify particular geographic attributes and components.
3. Interpret the relationship between people and places.
4. Comprehend the dominant characteristics of the cultural landscape.
5. Develop an integrated concept of the Earth as a place.

Meeting the goals of the course requires that the students think in terms of spatial relationships between phenomena. Human geography is taught with maps. Maps are made with spatial data. Without spatial data, there are neither maps nor Geographical Information Systems (GIS). For some time, educators have been helping students learn through mapping exercises. A current textbook teaches human geography almost entirely through a series of GIS exercises (Carter, 2019). Teaching through mapping provides a form of active learning. Although students are now less likely to physically map phenomena (using paper and colored pencils) they are much more likely to use GIS to create maps. GIS provides more than just cartography. It facilitates spatial investigation through queries and spatial analysis. In earlier sections of this course, students were given exercises that required that they interact with international mapping data. The act of manipulating data deepened the relationship that students had with the data and increased student learning (Dorrell et al., 2018). All of the goals of this course can be improved with the application of mapping technology.

We live in a world awash with data. Apps collect it and sell it. Companies, governments, and individuals use it. As educators, we teach students to find and use data. Some of our courses, particularly science courses, exist to teach the students proper methods for generating and collecting data. But the data that already exists is often taken uncritically. In the same way that some students may copy and paste a quote from the internet without considering the full context of the quote, we as people often use data without considering the processes that generated the data. This is particularly true with spatial data since spatial data is so often distributed in very large datasets. It's accepted as a monolithic entity, devoid of the context that produced it.

The goal of this research was to take the religion section of the curriculum of a human geography course and use OpenStreetMap (OSM) as a means of helping students interact with the material. Such active learning has pedagogical value (Jarvis, 2016) Students had a very brief lesson comparing mapping styles (choropleth versus dot mapping) as well as making some rudimentary maps themselves.

Religion was pulled from the OSM dataset for this study, but there are many other possibilities for mapping parts of the OSM dataset. For example, students could map the density of bicycle lanes or animal shelters, since both of these are in the dataset. Religion was selected for this mapping project due to its relative familiarity to students. Most neighborhoods have religious structures in them.

The open textbook in question was a collaborative effort of geographers to produce a free resource for instructors and students. It was intended to be a complete replacement for a commercial textbook. As such, it needed to have all the normal components of a commercial textbook, including relevant photos, graphs, and most importantly, maps. Of all the maps needed in such a textbook, maps of religion are the hardest to produce due to the lack of available data. The author of this chapter of the textbook adopted an alternative method for mapping religion using the physical locations of religious places found in OpenStreetMap.

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