

# Overlooked No More: Ángela Ruiz Robles, Inventor of an Early E-Reader

Long before Kindles and iPads became popular, Ruiz Robles, a teacher, created her Mechanical Encyclopedia to help lighten her students' textbook load.

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*This article is part of Overlooked, a series of obituaries about remarkable people whose deaths, beginning in 1851, went unreported in The Times.*

More than 60 years before Kindles, Nooks, iPads and other electronic devices revolutionized reading, there was a gadget invented in a village in Spain that had the potential to do the same.

The Enciclopedia Mecanica, or Mechanical Encyclopedia, as it was known, was not the brainchild of a multinational corporation like Apple or Amazon; it was invented in 1948 by Ángela Ruiz Robles, a widowed teacher who wanted to make learning easier for her students and her three daughters.

Her invention, a pale green box about the size of a textbook with an intricate interior, allowed a user to read words in any language and on any topic. It was intended to lighten a student's book load. Today it is seen by many as an analog ancestor of the e-reader.

"What she invented carried on into the future," her grandson Daniel Gonzalez de la Rivera said by phone from his home in Madrid.

He added, "Each time I see one I am reminded of my grandmother."

Within the Mechanical Encyclopedia's covers were three horizontal spools that held scrolls, each of which could be swapped out for another, on a different topic. The scrolls might hold text, elaborate line drawings or ornamental figure sketches, and the encyclopedia, which was battery operated, contained a small lightbulb, so users could read in the dark. Ruiz Robles created the device, and the scrolls along with it, "to get maximum knowledge with minimum effort," as she told the newspaper Pueblo in 1958.

The machine, which Ruiz Robles called "a mechanical, electrical and air pressure procedure for reading books," received Spanish patent 190,698 in 1949. A prototype received another patent, 276,346, when it was assembled in 1962 in the Ferrol Shipyard, with Robles overseeing the work.

Decades later, in November 2007, Amazon introduced the Kindle, with a six-inch

electronic ink screen that allowed users to download and read some 88,000 books and magazines. The devices sold out in less than six hours. This year, wordsrated.com, a research organization devoted to the publishing industry, reported that 15.92 million e-books were being produced every month.

In her day, however, Ruiz Robles could not muster much manufacturing support. Despite repeated efforts, she failed to persuade financiers to fund her creation, and it was never widely produced.

Today, the prototype of Ruiz Robles's Mechanical Encyclopedia is displayed at the National Museum of Science and Technology in A Coruña, Spain, a source of pride for her country and a testament to what might have been.

Ángela Ruiz Robles was born on March 28, 1895, in Villamanín, a small town in the province of Leon in northwestern Spain. Her father, Feliciano Ruiz, a wealthy pharmacist, and her mother, Elena Robles, a homemaker, ensured that she had a top-notch education. She graduated from a teachers college in Leon, then taught there until 1916.

In 1918, Ruiz Robles moved to Santa Eugenia de Mandia, a village in Galicia near the coast, where she worked as a teacher until 1928. She then moved to nearby Ferrol and founded the Academia Elmaca.



“We come to this world not only to live our life as comfortable as possible,” she once said, “but to worry about others so that they can benefit from something offered by us.” Agefotostock/Alamy

The school, located in her home and named for her three daughters, Elena, Elvira and Maria Carmen, offered classes by day and at night served as a training ground for students of little means. She also developed effective educational methods for students with disabilities, sometimes showing up at their homes to offer extra help.

In 1934, Ruiz Robles became manager of the Escuela Nacional de Niñas del Hospicio, a national school for orphans in Ferrol, where she helped girls who might otherwise be disadvantaged to thrive in society.

She found great meaning in working on behalf of others.

“We come to this world not only to live our life as comfortable as possible,” she told Pueblo in 1958, “but to worry about others so that they can benefit from something offered by us.”

Between 1938 and 1946, Ruiz Robles published 16 textbooks, including tutorials in spelling, grammar, syntax, shorthand and phonetics. But in 1946, her husband, Andres Grandal, a merchant seaman, died of a heart attack, leaving her to raise her three daughters alone.

Despite her considerable domestic and teaching duties, Ruiz Robles devoted what spare time she had to inventing a modern, interactive approach to education.

Gonzalez de la Rivera described his grandmother as driven; he noted that she preferred the solitude of her office and the clacking of her typewriter keys to sitting in cafes or playing cards with friends.

“She never wasted time,” he said. “She didn’t look at the birds. She was always working.”

In her Pueblo interview, she asked: “Can a good inventor be a good housewife at the same time? Yes, yes, but it is necessary that the servants or people around her do not force her into extensive conversations of ordinary things. Silence is essential as it facilitates the gestation of those ideas which then favor the progress of the world.”

In 1947, Ruiz Robles was awarded the Cross of Alfonso X the Wise for her innovations in the field of education, research and social work. In 1952, she was awarded a gold medal at an exhibition for Spanish inventors.

She spent the last few years of her life in Madrid with her daughter Maria Carmen, and she never gave up on having her invention manufactured. Ruiz Robles had offers to produce it in the United States, but she shunned them, saying her creation had to be made in Spain.

“I went with her to different organizations and lawyers to push her mechanical book,” Gonzalez de la Rivera said. “I explained how the product worked and how to make the book less heavy. We made the rounds without success. But my grandmother was never frustrated. I never remember her telling me, ‘What a pity’ or ‘What a disaster.’ She was never frightened away.”

Ruiz Robles died on Oct. 27, 1975. She was 80.

In 2018, the City Council of Madrid approved the naming of a street for her in that city.

“She was one lady with three daughters and without a husband,” said Gonzalez de la Rivera, her grandson, adding, “It is incredible what she did.”

This article will appear in a new book, “Overlooked,” a compilation of 66 obituaries out this fall.