

Learning Literacy with Wikipedia

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Imagine a world in which
every single person is
given access to the sum of
human knowledge...

Imagine a world in which
every single person is
given access to the sum of
human knowledge...

But they cannot read it.

Literacy, by the numbers

In the United States:

- 32 million adults can't read
(14% of the population – 1 in 7)

Worldwide:

- 774 million adults can't read
- 123 million youth can't read

Illiteracy disproportionately affects women and the disadvantaged.

**How can we help the
world read the content
created by the wiki
community?**

Four efforts



One Laptop per Child (founded 2005)

One Laptop per Child (OLPC)

- ~2.4 million laptops distributed
- 3 generations of hardware (XO-1, XO-1.5, XO-1.75)
- Open source software: Linux, Sugar
- Deployments worldwide



One Laptop per Child in Uruguay

Uruguay provided a laptop to **every 1st-6th grade child** in the country.

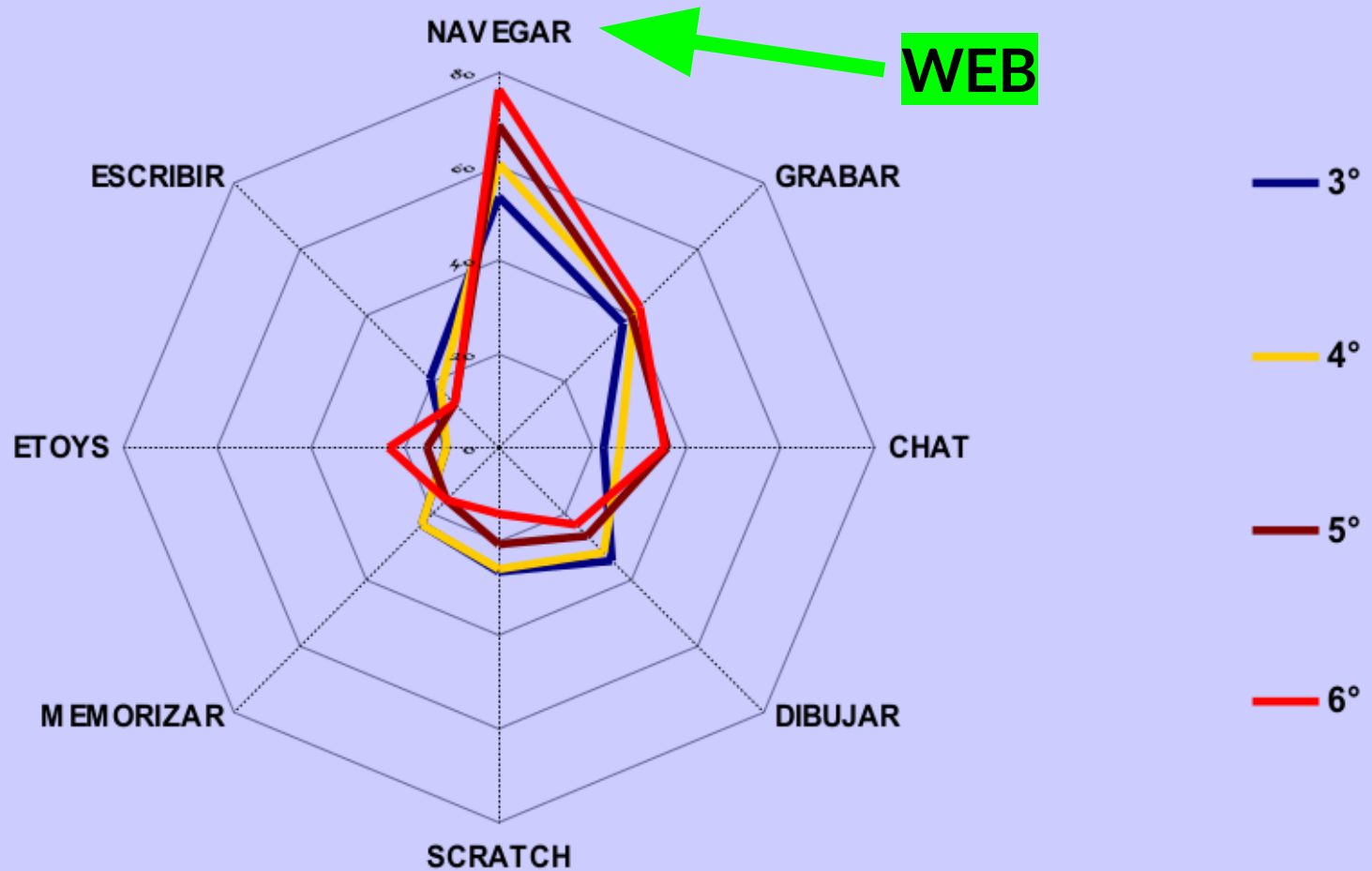
395,000 children,
18,000 teachers.

Installed on every machine: an offline Spanish wikipedia slice.



One Laptop per Child in Uruguay

NIÑOS 2009. Actividades preferidas por los niños, según grado (%)



Children's favorite activities, by grade (2009)

“I like my XO because...”

...puedo buscar información Internet/...es lo mejor que me han regalado/...podemos entrar material/...puedo jugar juegos de Internet y otros juegos, como videos de anaconda, guerra. Gracias./...me gusta mucho la Xo; a mi me gusta cuidar, jugar, trabajar./...a mi me gusta aprender/...me gusta chatear y conectarme en Internet y jugar a los juegos/...me gusta hacer cuentas, escribir/...me gusta jugar a los juegos y estudiar/...tiene lo que trabajar en clase./...porque es muy divertida y me encanta los programas que tiene./...la Xo porque me ayuda a hacer los deberes, también con ella no me aburro./...la Xo porque aprendí muchas cosas/...porque es linda puedo sacar información en internet también/...porque puedo bajar juegos, es lindo tener la Xo/...porque puedo jugar juegos buscar información y de todo un poco/...porque tiene el toxs por internet y es muy lindo tener una Xo. Muchas gracias por el regalo que nos dieron, es lindo para trabajar y la maestra nos enseñó a trabajar en el toxs/...para trabajar, jugar, sacar, fotos, entrar en Internet y bajar música/...lo que tiene, su forma, sus colores y sus programas/...me gusta mucho para chatear y jugar/...porque tiene para sacar fotos y grabar/...por que es mía propia/...me gusta para aprender, trabajar y enseñarle a mis hermanos, a mi padre y madre/...porque aprendí a ejercitar mas mi memoria de aprender otras cosas, a mirar video, a aceptar que algunas cosas no se pueden mirar/...porque nos especializamos más y es una maquina maravillosa/... porque me enseña a aprender más de otros lugares, porque es hermoso tener una maquina de esas, gracias./... porque cuando estoy aburrída me divierto con ella, me gusta tener una Xo./...porque tiene juegos y nos podemos conectar a Internet./...a mi me gusta todo lo que tiene la Xo./...me gusta trabajar con ella a mi me gusta compartirla a mi computadora./...la computadora para jugar y mandar mi correo./...me gusta la Xo para trabajar, sacar fotos y entrar en Internet./...me gustan los juegos que instalé en mi computadora./...me gustan los juegos, el internet, y escribir. Me gusta escuchar música en la Xo y me gusta sacarme fotos./...a mi me gustaría haber recibido con los demás compañeros./...a mi me gusto la Xo por que puedo entrar a internet como, buscar información, videos./...a mi me gustó mucho porque tiene juegos información libros, para leer nos ayuda mucho a estudiar/...a mi me gustó porque me gusta trabajar/...a mi me gustó tener una Xo porque es buena para trabajar y sacar materiales/...a mi me parece muy buena y poder jugar./... podemos aprender más/...a mí me gustó bastante porque es bueno tener una Xo/... porque cuando la recibí era tan lindo.

One Laptop per Child in Peru

Peru deployed 870,000 laptops (in a population of 29 million).

But it has struggled: despite spending \$225m on the laptop project, only 30% of seven-year olds were at the required level in reading after 15 months.

What happened?

One Laptop per Child in Peru

January 2007 census evaluation of 180,000 Peruvian basic education teachers:

- 92% of them lacked basic Math reasoning skills
- 62% of them did not read at 6th grade level
- **27% were at reading levels of zero or below.**

After 200 hours of remedial education run by local universities' faculties of Education, **13% of the teachers were still at the same zero or below level.**

Who teaches the teachers?



The Literacy Project

Ethiopia Pilot

Literacy Project in Ethiopia

What can we do for the millions of kids too far from a school or teacher?

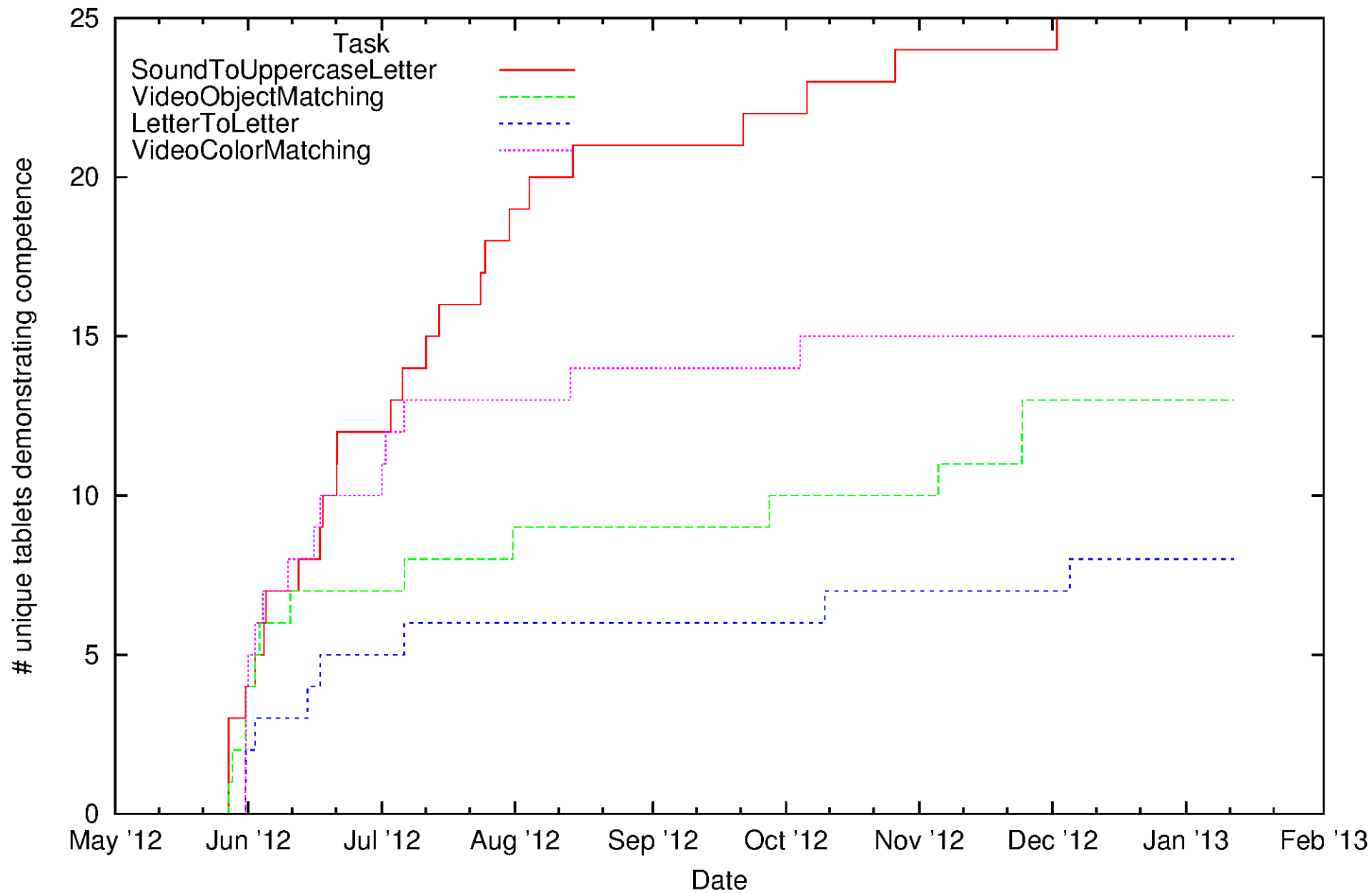
Pilot project in Ethiopia for ~30 kids in 2 villages with zero literate adults.

Phonics-based approach (RAVE-O).





Learning Over Time





bat



b c m t



Nell's Balloons

Matching game: pop the balloons before they fly away.

Easy to quantify proficiency.

6 levels teaching 8 letters, 8 words, articles and plurals.

Rewards: videos of space balloon flights.



How can the content community help?

Word Database

- An important part of many literacy curricula
- Set of nouns and simple verbs along with illustrations, media clips, audio pronunciations, definitions and uses.
- Forms the basis for vocabulary exercises and more interesting teaching tools.
- Parts of this database can be drawn from Wiktionary and Wikipedia, but there are many gaps to fill.
- For bilingual education, having word correspondences between languages is a helpful addition; the existing Wikipedia interwiki links can be mined.

Going further:

Nell's Wikipedia

Prototype: <http://nell-wikipedia.github.io/cscott.net/>



Moon



Moon - From Wikipedia, The Free Encyclopedia

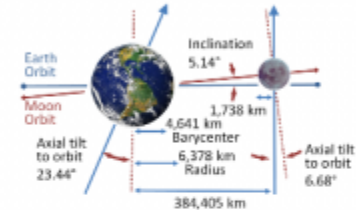
This article is about Earth's moon. For moons in general, see [Natural satellite](#). For other uses, see [Moon \(disambiguation\)](#).

The **Moon** () is Earth's only [natural satellite](#) and the [fifth largest](#) natural satellite in this [Solar System](#). The average centre-to-centre distance from the Earth to the Moon is 384,403 km, about thirty times the diameter of the Earth.

The Moon's diameter is 3,474 km,¹ a little more than a quarter that of the Earth. This means that the Moon's volume is about 2 percent that of Earth and the pull of [gravity](#) at its surface about 17 percent that of the Earth. The Moon makes a complete [orbit](#) around the Earth every 27.3 days (the [orbital period](#)), and the periodic variations in the geometry of the Earth-Moon-Sun system are responsible for the [lunar phases](#) that repeat every 29.5 days (the [synodic period](#)). The Moon is the only [celestial body](#) to which humans have travelled and upon which humans have landed. The first artificial object to escape Earth's gravity and pass near the Moon was the [Soviet Union's Luna 1](#), the first artificial object to impact the lunar surface was [Luna 2](#), and the first photographs of the normally occluded [far side of the Moon](#) were made by [Luna 3](#), all in 1959. The first spacecraft to perform a successful lunar soft landing was [Luna 9](#), and the first unmanned vehicle to orbit the Moon was [Luna 10](#), both in 1966.² The [United States](#) (U.S.) [Apollo program](#) achieved the only manned missions to date, resulting in six landings between 1969 and 1972. Human exploration of the Moon ceased with the conclusion of the Apollo program, although several countries have announced plans to send people or robotic spacecraft to the Moon.

Name and etymology

Unlike the moons of other planets, the moon of the Earth has no proper [English](#) name other than "the Moon" (capitalized³). The word *moon* is a [Germanic word](#), related to Latin *mensis*; it is ultimately a derivative of the [Proto-Indo-European root me-](#) also represented in *measure*⁴ ([time](#)), with reminders of its importance in



Some details of the Earth-Moon system. Besides the radius of each object, the radius to the Earth-Moon [barycenter](#) is shown. Photos from [NASA](#) [☞](#). Data from [NASA](#) [☞](#). Planets aren't spheres and orbits aren't circles, so numbers are only indicative. The Moon's orbital plane precesses about the Earth in an 18.6 year [cycle](#) [☞](#). Its axis is located by [Cassini's third law](#).

Nell's Wikipedia

A “read along” on/offline Wikipedia browser designed for literacy learning.

- Built with web technologies
- Articles can be updated from the app

Goal:

Nell's Wikipedia can speak the article text, highlighting each word as it is read.

Uses the Simple English Wikipedia to teach English language literacy.

Nell's Wikipedia

Open challenges:

- How to better support literacy learners?
Navigating to articles can be challenging!
- Support for multi-language learning?
(Interlanguage links are really cool!)
- Offline editing tools.
Wikipedia is not a read-only resource!

Recap



Recap

Four literacy projects:

1. **Uruguay** (loves Wikipedia!)
2. **Peru** (don't forget the teachers)
3. **Ethiopia** (open content for literacy acquisition)
4. **Nell's Wikipedia** (an interface for language learners)

You can help:

1. Curating language links, word/sound/image databases
2. Code stuff! (Nell's wp, offline editing, etc)

Thank you!

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<http://github.com/cscott/nell-wikipedia>