



In Guatemala there are 25 linguistic communities. The lingua primay ones are Castilian, Garífuna, Xinca and 22 Mayan languages are also spoken. The four major languages among the Mayan and indigenous languages are: Quiché, Kakchiquel, Mam and Kekchi. This linguistic diversity is the cultural and cognitive richness of the peoples.

Each of the languages of the country has a diversity of dialects, to the point that some linguistic communities have one for each municipality in which they live. Mam, for example, is one of the languages with the most internal variations: it has more than 1 million speakers scattered in 56 municipalities.

According to UNESCO, the indigenous languages of Guatemala are in danger of extinction, although to different degrees: two are "in a critical situation" and another eight are "in danger". The number of inhabitants who speak itza' descended to 1,094 in 2009. As if that figure was not worrisome, it would hardly reach 38 the real number of people who completely mastered it according to data from the linguistic community in San José, Petén.

One of the people who is very aware of this imminent loss is Roberto Ben Soch, entrepreneur, computer programmer and digital animator. Despite his economic limitations, Roberto has contributed to education and culture through a mobile application of Mayan language translation.

He is a Self-taught programmer.

Roberto Ben Soch (26) comes from the village Monte Mercedes, in Solalá. He began to relate to technology through the repair of equipment affected by computer viruses and then specialized in graphic design. He also handles special effects in videos and programming on the Internet. These skills that allow him to create websites. "I grabbed the computer for the first time when I was 17," says Roberto.

Roberto could not continue his university studies due to the complicated economic situation of his family; He only graduated from H.S. However, his interest in getting ahead led him to venture into the world of technology, learning computer skills in a self-taught way.

"In 2015 I made my first big project called 'Chat Ben', a social network similar to others that exist but with totally different characteristics, which caught the attention of thousands of people," says Roberto, the creator. The site allowed people to download and share files and images with movement; post ads, job offers and blog creation. The network got so big it overloaded the network and Robert didn't have the financial resources to keep the server could not continue.



Roberto Ben Soch (26) es emprendedor, programador informático y animador digital. Empezó a relacionarse con la tecnología a través de la reparación de equipos afectados por virus informáticos y luego se especializó en diseño gráfico.

### An innovative app

Subsequently, Robert decided to focus his efforts on the creation of a new project in order to help people in their community to preserve their mother tongue. Currently there are endless tools that are used for language translation. However, these solutions are not very useful when it comes to Mayan languages, so that people who want to know words in these languages are excluded from the technological benefits.

"Students and employees were always looking for the translation of Mayan words into Spanish or vice versa, but they could not find it anywhere," says Roberto. In addition, his brother and many other people told him that there was a need in different departments of the country, and even abroad, to create a translator of Mayan languages. Roberto started to translate kaqchikel into Spanish and vice versa as a pilot project. Afterwards, people asked for more languages.

It is with this motivation that in 2017 he launched the free application "Mayan Language Translator" that has reached more than 20,000 downloads so far and translates ten native languages of the country into Spanish and vice versa.

In just four months since the launch of the app (August 2017), 1,800 users registered. To gather the 770,000 words from the ten languages, Roberto turned to dictionaries, books, brochures and information on the Internet. "It took me about five months to develop and feed the app," he says.

The users that most use it come from Guatemala and the United States; In third place is Mexico, followed by Brazil, Argentina, Colombia and Honduras. Roberto also recorded downloads from England, Spain, the Netherlands and some countries in Asia. The majority of users are between 15 and 45 years old; it's about men and women, students, teachers and entrepreneurs. The application is available in the Play Store for the Android system and is downloaded for free.

In addition to being able to translate words, the user can go to the section called "el curso", in which multiple-choice questions are presented so that people can get to know more about the Mayan languages. "As an added value, there are general culture questions about Guatemala as a means of promoting our culture," adds Roberto. For now only Kaqchikel and Quiché have the "audio" section, which allows you to listen to the pronunciation of colloquial words and phrases.



## Mayas to the world

Having few financial resources, Roberto has had problems developing and improving the translator, since he has to cover expenses such as the Internet and registration in the Google Play Store. Also, he invested a lot of time in writing a good algorithm for the application. He works day and night in his own cybercafé to continue doing what he loves.

"In March of 2018, I launched 'Web Translator' since many people told me that they did not have Android, only tablet or iPhone, so they could not use the application; they asked me for a multiplatform app that can be used in different devices".

Roberto explains: Unlike the Mayan Language Translator, the Web Translator (which already has six languages) works on any system, but it must have an Internet connection.

The challenge for Roberto is to translate the other twelve remaining Mayan languages so that the application is complete. In the future, this programmer wants to spread 22 Mayan languages worldwide and in this way preserve the multilingual and multi-ethnic culture of his native country. In addition, he is thinking of integrating intelligent courses in his two applications. Even, you have already contacted local and foreign entrepreneurs. "I hope they support me to be able to move forward and develop my applications more," he concludes.

