

Inoma and its TAK-TAK-TAK System

Innova y Moderniza tu Aprendizaje, A.C. (Inoma) is a non-profit Civil Association founded on February 25, 2011, but whose concept and operation began in 2009. The goal of Inoma, among others, is to get children to learn on their own and reaffirm knowledge and skills in a fun way through the use of technology. Since 2009, Inoma has been working on the creation of educational video games in order to fulfil this purpose.

In 2012 the first developed video games were evaluated to see if they actually had an impact on learning and the result was that the use of educational video games has a positive impact on the academic performance of girls and boys. The experiment was carried out in 43 public elementary schools in the city of Puebla; children from 21 schools (8,500 approx.) played the video games and those from the other 22 did not (10,000 approx.). In simple terms: children who used the games for 12 sessions, each 45 minutes long, had a 5 percent (average) improvement in their scores. This is equivalent to a 40-point improvement on the ENLACE test, above Puebla's average of 577.9 (points on an 800 scale). For details of this test the impact assessment is available in the transparency section. With the favorable results of the evaluation, Inoma continued to develop video games and its platforms.

The TAK-TAK-TAK video games have been developed based on the curriculum of the Mexican Ministry of Education and recently other learning axes have been integrated such as the development of social-emotional skills. They are available on the taktaktak.com site as well as the online stores for Android, iOS and UWP operating system tablets. Each video game offers an individualized experience for girls and boys, allowing them to have an individualized learning experience according to their knowledge and abilities. In recent years Inoma has worked on the development of offline modalities such as *Tak Server* and *Tak USB* so that any child with access to a computer or tablet can play them, have fun and reinforce their learning for free without an internet connection.

The TAK-TAK-TAK system consists of two cycles. The first is for the child to access the video games, register with a user, play, have fun and learn. This generates data about each user such as which video games they used, for how long, at what level of the game they arrived, among others, and is stored in a database. With this individual information, through an algorithm, the user is guided towards those video games that are related to their academic performance, interests, and abilities. Thus, a personalized and more effective cycle is achieved for the learning of each one of the users.

The second cycle is made up of support and feedback tools for parents and teachers, which can be found on the labtak.mx portal; this cycle explains the educational content of video games and how to include them in class planning. Currently Inoma is working on a new functionality that will allow the creation of didactic plans through the site; teachers will be able to integrate in their teaching different educational resources curated by Inoma's pedagogical team, as well as the video games TAK-TAK-TAK. In addition to a planning tool, the site will contain a library with diverse educational content. This feature will be available to LabTak users in the second half of 2020.

Through labtak.mx, in the ReporTak section, teachers and parents can consult reports on the use of video games generated in real time to learn about the strengths and areas of opportunity of their children or students and support them in a personalized way. Through the reports they can know the progress of the child in the concepts, topics, and subjects covered by the educational TAK-TAK-TAK video games.

As of December 2019, TAK-TAK-TAK has 576,684 registered children mainly from Mexico, although the site also has visitors from many other countries around the world. For its part, LabTak closed the year with

18,490 teachers and/or registered parents; the number of users is lower than in TAK-TAK-TAK because the site has been on air for less time.

Over eight years 100 video games have been developed, of which more than 60 are available on the site and 30 of them are available for download from Google, Apple and Windows stores. TAK-TAK-TAK video games cover mainly math and Spanish topics; also, in a not so extensive way, science video games (physics, chemistry and biology), visual arts, history, music, ethics, financial education and social-emotional skills. It is estimated that around 200 educational video games are needed to cover the Mexican Ministry's of Education primary education curriculum.

Inoma works with different donors and partners to develop more video games and to enable more children and teachers to benefit from TAK-TAK-TAK. To this end, alliances and funds are being sought to help Inoma take the system to different public schools in Mexico. Together with the partner, donor and/or school, an intervention program is designed in schools, whose execution consists of: 1) a visit to the schools, 2) technical-pedagogical training, 3) a help desk and 4) evaluation of the program.

This way, it is made sure that the computers have the necessary requirements for the use of the system and that the teachers and those responsible for the media classrooms know how to use and navigate TAK-TAK-TAK, LabTak and their reports. In this way the use of video games and information reports as part of educational planning is ensured.

Finally, as part of the implementation, Inoma generates reports that show the average time of use in TAK-TAK-TAK and LabTak, the number of computers enabled, the number of teachers trained, and the number of students registered. This allows an analysis of results that can be done internally or externally depending on the magnitude or requirements of the project, and improve the intervention for future projects.

Inoma's efforts to develop quality products that benefit the education of children at the base of the pyramid with the help of technology have been recognized with several international awards: best mobile content in Learning and Education for the World Summit Award, best innovative project for Creator Awards Mexico by WeWork, honorable mention for the science video games TAK-TAK-TAK for Science in Action, finalists in the educational innovation contest for the WISE Awards 2018, regional winner in Latin America for being an innovative project aimed at improving student learning outcomes by Reimagine Education and finalists in the E-Learning category, also by Reimagine Education.