

Annual Report 2021

Centro Ceibal



Aprendiendo del futuro

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1. Summary

2021 Major Achievements

In 2021, the virtual education support system was strengthened by a videoconferencing system which exempted beneficiaries from paying for data consumption; this system was installed in Uruguayan servers and integrated into CREA, a course-management platform. This further increased the number of platform users and their access. In addition, at the start of the school year, all head teachers were trained on the use of students and teachers' platforms. Functionalities were added to the head teachers' platform to create a center monitor featuring Ceibal and ANEP indicators. It should be noted that these actions resulted from the 2020 joint analysis with ANEP Subsystems' General Directorates and Codicen's Executive Directorates of the strategies for blended education implemented at the beginning of said year. On the other hand, there was an increase in the offer of digital resources, making a new communicative approach Language platform available.

In 2021 there was a consolidation of work with educational institutions and of Ceibal's role in digital technology innovations in the Uruguayan education policies; examples of these are, the first trans media educational novel (Misterio de Cabo Frio), a series of interviews (Aprendices), and the first edition of the National Pedagogical Innovation Award (Nodo) jointly organized with ANEP and MEC, as well as the implementation of the Inter-Agency Board for Data Exchange. Ceibal's role as an education innovation agency has been internationally recognized, evidence of this is the USD 1,500,000 UNICEF Global innovation fund obtained together with UNICEF office in Uruguay to develop the project Puentes digitales para la equidad educativa (Digital Bridges for Educational Equity) which includes systematizing this model to be shared with other countries.

2. Main areas of work

Targets and achievements

Activities in 2021 were structured according to the 4 objectives set out in the 2021-2025 Strategic Plan value proposition, the dissemination of the value proposition, and the development of internal capabilities. The main annual results are presented below.

To ensure learning through technology

Regarding communication network infrastructure, the greatest challenge was to provide distant-learning services to the entire education system. Due to the large increase in users, it was necessary to expand capacity, increase infrastructure robustness and user experience, and strengthen security. For the first time, CREA was exempted from data traffic costs by all mobile phone operators in Uruguay. Conferences app was installed in ANTEL's DataCenter as a way of exempting users from data traffic costs. When in-person classes were canceled, the system, at full capacity, supported more than 120,000 daily users. This tool was built within CREA, providing ease of access and security. Also, 188 rural educational centers were built by November 30, going beyond the 170 initially planned. Regarding the handing out of devices, the target for 3rd year was met in record time despite the pandemic (95% by April 27, 2021), to date, 173,223 devices have been handed out. Management tools for the Windows device fleet were developed, including user enrollment, synchronization system, computer configuration automation, CRM integration, and In-tune reporting. Automatic space optimization processes were implemented. Device performance evaluation procedures were updated and multimedia evaluation procedures (camera, microphone, display and audio) created; this became more relevant during the pandemic.

To innovate in technological infrastructure, contents, experiences and digital environments

Ceibalab Media Lab is one of the main areas of work in this objective. Projects to be highlighted in 2021: The first transmedia educational novel, “El misterio del Cabo Frío”, produced in the context of Los desafíos profundos de la red global, and the first series of “Aprendices” (8 interviews to different leaders who share their experiences in key life competencies). Both initiatives were very well received, with 17,500 users logged in to Los desafíos profundos platform and more than 750,000 YouTube reproductions of Aprendices. The Global Learning Network continued enhancing its proposal in its 747 educational centers. This year, 1,670 teachers were trained in new pedagogies, 422 deep learning activities were implemented, and 22,764 students were assessed in their competencies. The Círculo de directores (Head teachers’ Group), composed of 40 head teachers holding monthly meetings, became an opportunity for reflection and exchange of practices and experiences. 2021 was also a year in which students’ voices were heard in the 6th Student Forum meetings involving 1,180 students nationwide.

Ceibal’s platforms reached a new record year: CREA became the main virtual meeting point for students and teachers taking online, blended education courses with 793,000 students and teachers from the private and public sector. Also, 224,000 students used the PAM and Matific maths platforms, and Biblioteca País featured more than 158,000 readers in 2021. Based on the needs identified by Secondary Education, students were able to take their exams through CREA (35,626 registrations). Besides, support to virtual mentorship sessions and new education plans involved 170,000 potential new users. As part of the strengthening of Ceibal platform ecosystem that contributes to the personalization of teaching, the Language Platform was launched in July. This platform, accessed by 32,036 students and 5,355 teachers, complements the teaching and learning of Language from a communicative perspective. Ceibal en inglés featured 3,239 groups from 4th to 6th form and 320 Lower Secondary groups. The Little Bridge platform for fun English learning was also launched with the participation of 59,996 students. New innovative and creative proposals for students and teachers were presented. Among them: Farmcraft, Little Bridge Olympic Games, Rural Schools Spring Festival, Shakespeare Festival and CEI Reads, and the publications “La Voz de los Niños” and “Ceibal en Inglés contra viento y marea”.

Another priority area is the promotion of STEM through innovative formats

aiming at an equal participation of girls and boys, among them:

- Encuentro Matemático: Integrated use of digital technologies and mathematics, collaborative learning and active student involvement through problem solving and real situation modeling. In 2021, it involved 247 teachers and 7747 students from public and private schools.
- The HT-HT methodology created by the Education Commission combines problem-based learning and technology for personalized mathematics teaching and learning. A pilot program was conducted in 2021 involving 24 5th year Primary teachers.
- The Computational Thinking Program (PC) included more than 36,000 students in 1764 4th to 6th groups from 575 schools, closing the year with 31,166 students in the Bebras Challenge (International PC Test) vs. 4,000 participants in 2020.
- In the context of PC, the pilots PC+Mat (146 1st form mathematics groups) and RiverA (artificial intelligence program in Rivera with 60 IT teachers).
- The Ceilab program reached 100 elementary and middle schools, offering training courses and personalized mentorship to complement maker projects. At the end of this year, 71% of the centers are rated green (highly active), a 22% improvement compared to 2020. Also, a Ceilab specialization proposal was generated in the audiovisual, digital manufacturing and science areas in 6 centers.
- In 2021, 27,000 Micro:Bit boards were delivered, reaching more than 90,000 since inception, also, the Micro:Bit Activity Notebook, jointly created with teachers, was released. Four lower secondary students won the Latin American category of The International Do Your Bit Challenge for solving ODS-related problems using programmable boards.
- The 8th edition of the Robotics, Programming and Video Games Olympics was held in person in schools nationwide with the participation of more than 1200 students and teachers. At the international level, the Uruguayan team got second place in the Economy category and the best score in the technical challenges of the FIRST Global robotics competition.
- In 2021 Jóvenes a Programar (JaP) turned 5 years and showcased its significant achievements with more than 3200 graduates since inception. This year, 1,557 students graduated from phase 1 of the program and 806 from phase 2. It was a record year for JaP in terms of labor insertion, 300 youngsters enrolled in the program. A new line was developed to build capacity in CECAPs. This pilot experience provided training to teachers from 3 centers; specific curriculum, contents, teaching guides and classroom activities were developed for the Technological Laboratories and the Technological Experimental Workshop.

To contribute to the continuous improvement of educational processes

Regarding teacher professional development, two activities including specific objectives of the National Educational Policy Plan (NFP) are worth highlighting. One was Ceibal's participation in MEC's Nuevos Rumbos Seminar. Ceibal's module presented the technology integration and digital teaching skills models, based on design thinking methodology. The proposal was very well received, and ANEP asked Ceibal to adapt this module to include it in the Managers training course first module to be launched in November. This 25-hour course was attended by 569 managers and awarded 3 credits. Ceibal, also, offered 11 virtual courses of various subjects, reaching a total of 8,627 teachers, and provided teaching training on programs and resources to 83% of the total Magisterio (Primary School Teacher Training Center) students and 67% of Maestro de Primera Infancia (Early Childhood Education) students.

Work was done to ensure an inclusive education that guarantees communication, participation and educational accessibility through digital technologies. Training was provided to 1,730 teachers and CREA's community of practice has already reached 1,388 teachers. There were 429 device replacement and advice requests and 48 ramps were delivered from the Valijas viajeras project. In September 2021, an information exchange agreement was signed between ANEP, Ceibal Center, INEED and the MEC, providing framework for the inter-institutional committee, which aims to optimize the exchange between these agencies. Relevant information has been exchanged this year, data on attendance and connection to CREA platform - between ANEP and Ceibal - and the results of Artistas 2020 - between INEED and Ceibal. Based on PPEN targets, a Monitor program for school management teams was jointly developed with ANEP. The Behavioral Perspectives Department, created in 2021 second semester, implemented several projects: a default tool to increase the number of students taking the Bebras challenge; "decision support" tools to mitigate the potential high dropout rate in the managers' course, and a MINDSPACE methodology workshop to use behavioral perspectives in the field work of Ceibal in English mentors. In the area of user experience, 73% of the Education Management programs/projects were impacted on. Changes were made both in strategic plans, and in digital products (microsites, platforms, interaction) based on a study on users' motivation.

To develop digital citizenship competencies

Ceibal is part of the Digital Citizenship Working Group and therefore follows the National Digital Citizenship Strategy and its definitions, promoting digital citizenship through a critical, reflexive, safe, responsible, creative and participatory use of digital technologies. Several activities were implemented throughout the year, including courses (2), webinars (4) and workshops (Nuevos Rumbos Seminar and the IV Digital Citizenship Forum together with AGESIC that involved 4 conferences, 4 round tables and 6 workshops). More specifically, 473 teachers finished the “Building Citizenship in Digital Environments” course for CFE, DGES, CECAP and 62 students finished the “Seguridad de la información - Seguro te conectas” course.

Value proposition dissemination

In 2021, the Communication Area was reconverted to ensure that all potential beneficiaries of an educational program or service get to know about the proposal and the tools to join in.

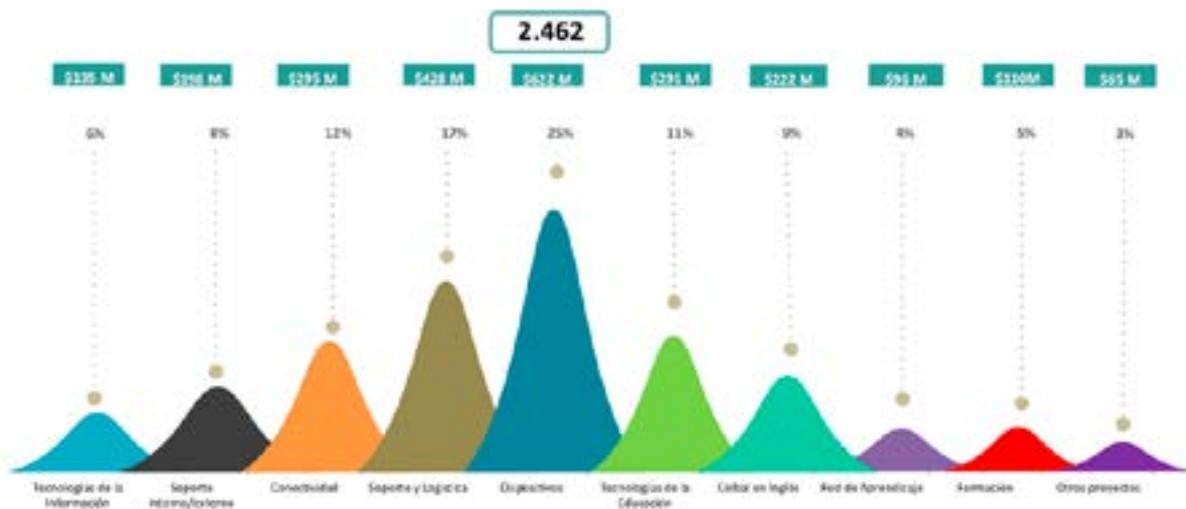
Internal capabilities

In 2021 the organization completed the implementation of a Workday-Adaptive planning tool into its information systems, which optimized the budgeting process and improved institutional resource-management capacities, and provided new input for decision-making. Also, institutional control tools were improved through the design and implementation of a new Institutional Control Board to facilitate the comprehensive monitoring of its Strategic Plan objectives and activities.

Systems were developed to automate the consumption of fixed asset products from work orders and two equipment sales portals (for teachers and private institutions). In addition, the course registration system was developed, which allows Ceibal to provide a centralized, easier-to-manage proposal. On the other hand, a Citizen Observatory was developed to provide the public opinion and researchers with information on platform use data. The deployment of the Information Security Management System continued; substantial progress was made in: SIEM (connected to AGESIC SOC 24/7), ethical hacking, awareness and training plan, improvements in single sign-on authentication, device updates and the use of password policies that impacted on 880,000 users. The number of security incidents reported as of November 30, 2021 was 166, lower than those 212 recorded in the same period in 2020, despite the increase in use in 2021. Finally, regarding staff turnover in the technological areas, the first edition of the “Ceibal-JaP Academy” was launched, providing practical training 10 JaP graduates.

3. 2021 budget execution 2021

In 2021, and aligned with the guidelines by the Executive Branch, Centro Ceibal was very cautious in its budget execution. It focused on increasing efficiency to combine austerity and maintenance/improvement of the quality of goods and services provided. The 2021 budget execution forecast is of \$2.462 billion distributed as follows:



At the end of November 2021, 93% of the projected budget (\$2.299 billion) has been executed and committed, 7% (\$163 million) pending execution in December.

4. 2022 main projects and objectives

- New platforms: Aleks, adaptive mathematics platform with primary and secondary education contents; Teacher Professional Development platform; Programming platform; and Open EdX as an additional training virtual space. An AI Elements platform will be launched to disseminate its main concepts.
- First stage of the transformation process in Lower Secondary IT rooms to build Preceilab centers, starting with the first 40 rooms. Also, 30 new schools will have their own Ceilab centers.
- Formats for scaling programs: The círculo de directores will grow in a decentralized manner following Ceibal's format; the Nodo Awards will be milestones in a certification path for schools' innovative competencies.
- Proposals for professional teacher development to support the education system and promote innovation; diagnostic tool for digital teaching skills; new lines of training in cognitive and behavioral sciences. The project with UNICEF will provide training opportunities for greater inclusion and equity.
- Ceibal Media Lab will continue to innovate with a new edition of the trans-media novel and a new "Aprendices 2" season. It will also be the second edition of the Nodo Awards.
- Ceibal en Inglés and Computational Thinking will continue to offer remote teaching courses aiming to reach 3250 and 2000 groups respectively.
- Efficiency in the execution of some of the support processes will be improved through automation, using RPA (Robotic Process Automation) tools.

