Pedagogical Implementation Report
Plan S@miento BA 2010-2015

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Buenos Aires Ciudad
Authorities

Head of Government
Mauricio Macri

Minister of Education
Esteban Bullrich

Cabinet Chief
Diego Fernandez

Undersecretary for Educational Management and Pedagogical Coordination
Maximiliano Gulmanelli

Undersecretary for Economic and Financial Management and Resource Administration
Carlos Javier Regazzoni

Undersecretary for Educational Policy and Teaching Training
Alejandro Oscar Finocchiaro

Undersecretary for Educational Equity
Soledad Acuña

General Director of Educational Technology
Jorge Aguado

General Director of Planning and Educational Innovation
Mercedes Miguel

Operational Manager for the Incorporation of Technologies
María Florencia Ripani
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We live in a world in which the largest population is that of internet users. Two billion people log on to the internet every day. And that not only has an impact at the communicational level, it also has a huge impact on the way in which we interact and the way in which we function as a society.

Today’s much more dynamic world demands a much greater dynamism of us, too. And the Plan S@rmiento BA is designed to make a large contribution in this regard, because we all now have a part to play in the construction of knowledge.

Access to the internet and to information, which is so democratic, so open and egalitarian, makes this possible. It enables us to work together so that, for example, a child can teach a parent how to write an e-mail. And that dynamic, in which a child teaches a parent, also takes place between teachers and pupils. And that is a good thing. It is great when that can happen.

The Plan S@rmiento BA is thus one more tool in this changing world, which seeks quite simply to make accessible to everyone the information on the internet that we all need to know and to be able to use.

That is why the Plan S@rmiento BA is not just about handing out computers; it is much more than that. It is the possibility for all teachers, supervisors - and now we are even going to include pre-school teachers - and, obviously, all the pupils in the primary education system, to access the internet. At school and at home, with their families, with their parents. And for this tool that is the Plan S@rmiento BA to serve to unite us as a community: all of us who live in this city and who participate in some way in the educational system.

Because at the end of the day, what matters most is for all the school pupils in the City of Buenos Aires to learn. To learn everything they need to be able to fulfil their dreams. To learn everything they need to be able to go to secondary school, to technical school, to follow whatever path they choose, to be better citizens and people.

Our aim at the Buenos Aires City Government is for the Plan S@rmiento BA to be a tool for building better quality education. But above all, for it to make us all much freer and make society much more just, inclusive and democratic.
Introduction
The Plan S@rmiento BA, the pedagogical innovation project based on the one-to-one learning model, was developed in the framework of the Comprehensive Plan for Digital Education entitled Plan Integral de Educación Digital (PIED), a proposal put together by the Buenos Aires City Ministry of Education, which seeks to integrate the teaching and learning processes of educational institutions into digital culture.

This requires that our schools be transformed into places for building knowledge that helps pupils become inserted into a society that, in recent years, has undergone dramatic changes related to the emergence of Information and Communication Technologies (ICTs).

Providing portable computers and connectivity is only a starting point for this programme, the aim of which is pedagogical innovation. The narrowing of the digital divide is not guaranteed by mere access to technology, instead it requires the building of skills and competencies to ensure the integration of pupils into twenty-first century society.

The Directorate General for Educational Planning and Innovation (DGPLINED), through the Operational Unit for the Incorporation of Technologies (GOINTEC), which is in charge of the pedagogical implementation of the Plan S@rmiento BA, presents this document detailing the strategy and execution for addressing these major challenges from the start of the Plan, in 2010, up to 2014. It also includes the voices of the main actors in the educational community: pupils, teachers and families, who with their enthusiasm and creativity give real meaning to this project.

We aim to share the experiences and the steps taken on a path that is still under construction, and along which all of us actors are learning together to progress, day by day, in order for state schools pupils in the City of Buenos Aires to receive a quality education that will guarantee their future.
The vision of the Plan S@rmiento BA is based on its objectives, which emphasize its innovative direction and the development of strategies to lay the foundations for twenty-first century schools and to promote quality education.

Objectives

- To promote quality education with equal opportunities.
- To foster socio-educational inclusion, by prioritizing the most disadvantaged sectors of society.
- To ensure access to literacy in the context of digital society.
- To develop pedagogical innovation mechanisms in the context of the culture of digital society.
- To encourage the learning of skills necessary for integration into digital society.
- To promote the construction of spaces of encounter between schools and the community, mediated by emerging practices in communication and culture.
- To strengthen the role of schools as a driving force for new ways of constructing knowledge.
- To promote knowledge and critical and creative appropriation of Information and Communication Technologies (ICTs) in the educational community and society in general.
Mercedes Miguel
Director General of Educational Planning

The S@rmiento BA is based around pedagogical aspects. And that is why we aim to work very closely with the most valuable human resource that we have within schools, which is the teachers. We understood that in order to make the Plan S@rmiento BA a pedagogical plan we needed to incorporate the teachers, so that they could take ownership of this pedagogical tool in order to be able to transfer knowledge in a different way to pupils, who are the central focus of all our educational policies. We now cater to 616 schools, approximately 17,000 teachers and around 170,000 pupils. And this makes us one of the educational systems with the largest 1-to-1 learning model in Latin America.
From the outset of the Plan, in 2010, multiple areas for constructing innovative practices were drawn up, which can be grouped into two main dimensions: one educational and the other related to pedagogical management.

![Plan S@miento BA Diagram](image)

<table>
<thead>
<tr>
<th>Educational Dimension</th>
<th>Vision</th>
<th>Implementation</th>
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| **Pedagogical innovation strategies** | Documents | • PIED Pedagogical Guidelines  
• PIED Pedagogical Framework |
| **Core themes** | | • Collaboration, creativity and play  
• Critical, responsible and collaborative participation  
• New modes of representation |
| **Technological Infrastructure** | • 1-to-1 learning model (netbooks for each student and notebooks for each teacher)  
• Wireless connectivity throughout the city (WiMax) | |
| **Exchange of experiences** | • Integrar: participatory knowledge portal | |
| **Skills for the 21st century** | • Special actions and events  
- PIED Pedagogical Innovation Awards  
- Digital Festival  
- Meeting of pupils  
- Digital education congress | |
| **Training and accompaniment** | • Learning goals  
• Curricular Design for Digital Education  
• Plan S@miento BA Taxonomy | • Teaching practice: planning, teaching, innovation  
Pupils’ learning  
• Start: prior to delivery of equipment  
• Scope: teachers, pupils and families  
• Classroom-based - personnel assigned to all schools  
- (main) and remote - centralized services  
- (complementary)  
• Central and school-based workshops  
• Congresses, seminars and other events |
The pedagogical management dimension guides the organizational cultural model in order to create mechanisms suited to a type of management that promotes change and innovation. This is reflected in the creation of the PIED, the pilot test launched in 2010 and the subsequent full-scale implementation beginning in 2011.

The organizational model based on collaborative management, in line with the values of the digital culture, proposes a continuous monitoring and evaluation process for the purpose of ongoing reformulation and improvement of the Plan.

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<th>Pedagogical management dimension</th>
<th>Vision</th>
<th>Implementation</th>
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<td>Macro objectives and strategies</td>
<td>• Creation of the PIED</td>
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<td>Organizational model</td>
<td>• Administrative, operational and regulatory framework of the PIED</td>
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<td>Collaborative Management</td>
<td>• Advisory boards</td>
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<td>• PIED Network of Supervisors</td>
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<td>• Exchange with the various educational actors</td>
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<td></td>
<td>Innovation and scale</td>
<td>• 2010: Pilot test (6 schools)</td>
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<td>• 2011: Full-scale implementation (580 educational establishments)</td>
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<td>Monitoring and evaluation</td>
<td>• Studies on the Plan's progress</td>
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<td>• Satisfaction surveys</td>
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<td>• Evaluation</td>
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<td>• Digital communication platform</td>
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<td></td>
<td>Ongoing reformulation and improvement</td>
<td>• Evaluation of information</td>
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<td></td>
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<td>• Redefinition of strategies</td>
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Implementation
The Plan S@rmiento BA benefits **616 schools, 17,000 teachers** and **170,000 pupils.** It covers all state-run primary schools in the City of Buenos Aires, including both ordinary schools as well as those providing special needs and adult education, and free private schools, in addition to teacher training colleges at the primary level.

### Beneficiaries of the plan

- **170,000 pupils**
- **17,000 teachers**
- **616 schools**

### Breakdown of schools

- **441** Ordinary schools
- **14** Special schools
- **80** Primary schools for adults
- **50** Special schools
- **14** Government subsidized private schools
- **17** Teacher training colleges (mobile units)
Educational Dimension

Pedagogical innovation strategies

Documents

There are a number of documents that set out the framework for implementing the Plan in the context of digital culture. The pedagogical framework of the PIED presents the starting point for thinking about how to promote quality education and social inclusion, through the integration of innovative practices. In addition, the pedagogical guidelines of the PIED define the programme objectives and propose the integration of new educational practices into the school community.
Pedagogical Guidelines of the PIED

- Integrating digital culture through innovations in teaching
- Adopting new roles in the educational community
- Opening the door to continuous social learning
- Exploring new ways of understanding and constructing reality
- Speaking the language of the new media
- Learning and playing in digital environments
- Constructing a critical, responsible and caring perspective
- Guaranteeing access to equal opportunities and chances
- Taking advantage of the present while looking to the future
- Learning together
Through the Plan S@rmiento BA we are seeking to integrate schools into digital culture. This involves promoting learning through play, creativity and diversity and creating spaces in which pupils are the real producers of knowledge, while at the same time taking into account the importance of collaborative production and of teachers as leaders of change. For this reason we have a vital system of training and accompaniment and assign a specialist in ICT to each of the schools impacted by the plan so that they can help teachers to critically and creatively integrate computers into teaching and learning processes.
Core Themes

Based on the objectives and pedagogical guidelines of the PIED, three core themes are identified:

- Collaboration, creativity and play
- New modes of representation
- Critical, responsible and cooperative participation

These themes help orient the Plan towards collaborative models of knowledge construction, which invite pupils to understand and explore the new modes of representation that are emerging along with digital media, thereby enabling them to produce creatively and participate in cyberspace in a critical, responsible and cooperative manner.

The core themes include the promotion of networking, the creation of horizontal ties of collaboration and the emergence of the pupil as the protagonist and constructor of knowledge, within an emerging communicational ecosystem that demands changes in the way in which content is produced, among other aspects.

Within this framework, play is proposed as the element linking motivation and knowledge production.
The video game “Adventures in cyberspace” is a proposal to guide children in responsible internet surfing, with a view to promoting a responsible and cooperative coexistence.
The Plan encourages children to use critical thinking for solving problems, through spaces designed for programming and robotics. These activities, aimed at creating and developing movable objects and simulations, also seek to promote other digital education skills such as creativity and innovation, learning and play, exploration and representation of the real.
Technological Infrastructure

Around 40% of the families that received them did not have computers prior to the implementation of the Plan S@rmiento BA.

1-to-1 Learning Model

- Pupils receive netbooks: small, portable and lightweight computers with long battery life and high impact resistance.
- Teachers receive notebooks: more powerful portable computers than those of pupils, which are equipped with a DVD compartment.
- Everyone can take their computers home during term time and holidays.

Wireless Connectivity

CABA Schools Network

- Unlimited free internet surfing for users.
- Fast broadband
- Filter for pornographic content
- Updating of software (for example, antivirus) and content
- Theft prevention system - based on certificates for each computer, whether or not they are within the area covered by the Plan S@rmiento BA.
A project of these characteristics, which seeks among other things to provide the possibility of extending digital inclusion to the families of pupils and teachers, demanded the creation of a wireless connectivity network that we call the Red de Escuelas CABA. This network makes it possible for all the pupils’ netbooks and the teachers’ notebooks to be connected both in schools as well as in any part of the City of Buenos Aires.
Applications and content for notebooks and netbooks

The computers provided as part of the Plan come with over 120 free applications, almost all of which are free and open software, in addition to 650 links organized by curriculum areas, more than 3,400 media resources and 60 books in digital format. This material is presented as a starting point for teachers and pupils to put together their own projects and trajectories.
Exchange of experiences

Integrar: participatory knowledge portal

Exchanging experiences is a central theme of the Plan. To facilitate the possibility of sharing resources and experiences, the Integrar portal was created. This is a digital platform set up by the Buenos Aires City Ministry of Education, which includes a special “educational resources” section that invites the whole community to participate in knowledge construction.
Special actions and events

These are activities that mainly promote the creative incorporation of ICTs into educational projects, fun ideas based on digital resources, and the central role of the pupil.
Skills for the twenty-first century

In order to carry out the pedagogical implementation of the Plan S@rmiento BA, the Curricular Appendix on Digital Education at Primary level was specially drawn up. This document proposes not only access to technology but also knowledge of how to use it according to different needs and interests.

Based on the competencies set out in the curricular document, the Plan S@rmiento BA Taxonomy was designed to present resources that encourage the development of twenty-first century skills.
The Plan is supported by a system of training and accompaniment carried out by a large number of personnel specialized in ICTs, who have a permanent presence in all the beneficiary schools.

In addition, workshops covering fundamental themes of digital culture are offered to teachers, pupils and their families.
Virtual Campus of digital education

This is a training space available to all teachers. It presents workshops organized according to levels and modalities, in addition to tutorials and educational documents relating to Digital Education.

http://campusvirtualintec.buenosaires.gob.ar/

Pedagogical-digital help desk
This is a service that provides immediate remote advice on school projects that include the use of ICTs. It offers collaboration on the selection of materials and technical and pedagogical assistance for teachers via phone, email and other digital communication channels.


Diagnosis and training plan
A diagnosis and training plan is drawn up in each school, which allows the specific needs of the institution and its teachers to be identified in order to carry out the training actions necessary to facilitate the use of notebooks and netbooks in their planning and daily tasks.
4 Evaluation
Using various mechanisms, the Plan produces follow-up reports that provide quantitative and qualitative data.

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<thead>
<tr>
<th>Actor in the education community</th>
<th>Statement</th>
<th>Level of agreement</th>
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<tbody>
<tr>
<td><strong>Pupils</strong></td>
<td>learning is more fun</td>
<td>91%*</td>
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<td></td>
<td>I have more desire to go to school to learn</td>
<td>83%*</td>
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<td></td>
<td>I am more enthusiastic about doing homework</td>
<td>73%*</td>
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<tr>
<td>With netbooks</td>
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<td></td>
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<tr>
<td></td>
<td>I enjoyed myself more than in ordinary classes</td>
<td>76% **</td>
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<tr>
<td>With videogames</td>
<td></td>
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<tr>
<td><strong>Digital Pedagogy Facilitator</strong></td>
<td>the use of virtual spaces collaborative work between pupils</td>
<td>93% ***</td>
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<td>the development of activities in spaces other than the classroom</td>
<td>84% ***</td>
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<td>It promoted</td>
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<tr>
<td><strong>Teacher</strong></td>
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<tr>
<td><strong>Management Team</strong></td>
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<tr>
<td><strong>School Supervisors</strong></td>
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Testimonials
“The institution’s learning dynamic has changed in the sense that there has been an increase in collaborative work. The children self-manage and serve as a support for other classmates. More importantly, it should be emphasized that these children, who perhaps have never had or never would have access to a netbook or a computer or to new technologies, now have that access since the Plan S@rmiento BA was implemented”.

**Silvia Bisso**  
Headmistress of School Nº 17 D.E.* 5.

“Since she brought the netbook home, my daughter seems much more eager to do her homework, it is an added attraction for her, she no longer makes excuses not to do it. And well, my older children also use it and it fulfils the function it is meant to fulfil”.

**Margarita Aillapán**  
Pupil’s mother.

“It is a bit difficult to teach my mum, but... first I taught her how to turn it on, then I showed her how to access the Internet. Now she can log on and see what friends or relatives send her.

**María Laura Moya Aillapán**  
5th year pupil at School Nº 17 D.E. 5.

*D.E.: School District, which represents a geographical division of the educational system within the City of Buenos Aires.*
Gabriela Fernández
Teacher of 2nd cycle at School N° 5 D.E. 2

“Every time we propose an activity involving the netbook, the children are much more interested in working, and they approach the work in a different way and with more enthusiasm”.

Demián Duarte
5th year pupil at School N° 21 D.E. 4.

“You can make videos using photos, you can create characters, animals, whatever you want”.

Sol Puca
5th year pupil at School N° 17 D.E. 5.

“I like bringing the netbook to play and learn every day”.

Zoe Rabovich
2nd year pupil at School N° 5 D.E. 2.

“I put clothes, rings and dresses on my character. My avatar was cute and he was funny. When I moved the mouse, he moved his eyes like this”. 
Laura Mansilla
5th Year teacher at School Nº 21 D.E. 15.

“The children are much keener to work with the netbooks, they are interested, motivated and enthusiastic”.

Valentina Rodríguez de Rosa
5th Year pupil at School Nº 21 D.E. 15.

“The experience of using Scratch was fun”.

Vanesa Kronfli
5th Year teacher at School Nº 21 D.E. 15.

“What the netbooks do in the classroom is, on the one hand, facilitate access to information, and on the other, they enable us to create different learning situations in which knowledge is acquired through experience and by doing”.

Fabrizio Puntel
5th Year pupil at School Nº 21 D.E. 15.

“With the netbooks we can do things that aren’t possible with other computers”.
6

Noteworthy experiences
Laugh out loud

“Laugh out loud” is an idea that combines poetry, audiovisual narrative and joy. It is an example of collaborative work, which proposes play as a linkage between motivation and learning.

This project, which links the areas of language practice, IT and general knowledge, was based on a reading of the poem Llorar a lágrima viva by Oliverio Girondo, which served as the inspiration for pupils to express themselves and share the everyday situations that make them laugh. The final production consists of a video recorded using stop motion and based on images and sounds obtained by the pupils using their own netbooks.

http://youtu.be/T44x8K4i9YM0
Creating awareness: knowledge leads to respect - The flower of Yakaira

Teacher: Verónica Linares
School Nº 19 D.E. 5
Ordinary Primary Level

As a production associated with the language of the new media and emerging narratives, the pupils collaborated in creating a legend in audiovisual format. They used photos and drawings, which they retouched themselves, and recounted the story by recording their own voices.

http://www.youtube.com/watch?v=G380YyqC4OQ
Setting fractions to music

Teachers: Verónica Clelia Brunner
Norma Beatriz Lascuraiñ
School Nº 2 D.E. 7

In a joint project between the subject areas of mathematics and music, the pupils, as protagonists and constructors of knowledge, created “ringtones” to be used in different devices (mobile phones, school bell, start-up music for their netbooks) by relating the concepts of fractions to musical bars.

http://integrar.bue.edu.ar/integrar/blog/articulo/musicalizando-fracciones/
Let’s see what we hear

**Eje:** Programming  
**Nivel:** Ordinary Primary  
**Escuela:** N° 21 D.E.15  
**Docente:** Vanesa Kronfli and Laura Mansilla  
**Grado:** 5th

The aim of this project was to interpret and construct dynamic models of real-world processes (simulation) and to experiment with programming. The pupils emulated a vu meter using the program Scratch with the “Vu meter” tool, which enabled them to visually record the sound intensity generated in different environments.

They created an infographic with the final project report, along with an audiovisual tutorial detailing the steps to follow in order to make a VU meter, and they used digital mapping resources (Google Maps) to geographically locate the places in their neighbourhood where they had surveyed the sound pollution levels.

**Integrar**  
http://integrar.bue.edu.ar/integrar/blog/proyecto/vemos-lo-que-escuchamos/

**Blog**  

**Tutorial**  
https://www.youtube.com/watch?v=wMHhpdvssqA&list=UUkWPLwgX6uj4MUGKdfxSrg
Further information
Further information

• Pedagogical Guidelines. Plan Integral de Educación Digital. (Comprehensive Plan for Digital Education). Plan S@rmiento BA
• Pedagogical Framework. Plan Integral de Educación Digital. (Comprehensive Plan for Digital Education). Plan S@rmiento BA
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• Pedagogical Implementation Video Plan S@rmiento BA.
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• Integrar web portal: educational resources.
• Booklet: “Educational Resources”. Plan S@rmiento BA
• Document: “Internet Safety”. Plan S@rmiento BA
• Document: “Teaching ideas for using netbooks without connectivity”. Plan S@rmiento BA
• Document: “Resources for the Plan S@rmiento BA netbooks and notebooks”. Plan S@rmiento BA
• Document: “Responsible use: tips for looking after your computer”. Plan S@rmiento BA
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• Document: “Recommendations for using the IWB in the framework of the PIED.” Plan S@rmiento BA
• Report on results, pupils and teachers of ordinary, special and adult education. General Directorate for the Evaluation of Educational Quality (DGECE)
• Baseline Assessment Report. Families of ordinary and special education”. Plan S@rmiento BA