



Pedagogical Considerations of the OLPC

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ONE-To-ONE Computing Models**

**Panel IV: Software and Hardware
in One-To-One Computing Programs**

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- **Brasil reached the school access universalization goal (~55Million students at Basic Education – 90% public 7.2M kindergarden, 33.5M K8, 9M high-school, 4M younger/adults)**
- **All Public High-Schools have at least one computer lab with 10 computers, shared by all students and teachers**

However

- **Last in 32 countries on the PISA-OECD (Programme for International Student Assessment) in reading, math and sciences**
- **60% of the teachers need complimentary formation**
- **Teachers almost do not invest buying books or doing continuous formation**
- **75% of our population => functional illiterate**



- **Education of Quality for ALL**
 - **The focus of the School is NOT in the transmission of contents**
 - **The School must form citizens**
 - **creative,**
 - **flexible,**
 - **with critical spirit,**
 - **curious and capable to formulate questions,**
 - **capable of recognizing and characterizing problems,**
 - **capable of searching and creating solutions,**
 - **that learn to learn,**
 - **that know how to live, to coexist and to collaborate in society.**
- ➔ **Curiosity Pedagogy – *Paulo Freire***
- ➔ **Better Strategies amplified (or enabled)
by Better Tools**



- **One computer lab with ~ 10 computers per High-School**
- **Teachers have few time to be familiar with the technologies and with the pedagogical practices using these technologies**
- **Most of the time the use by students and teachers is fast and superficial**
- **Difficulties in configuration and maintenance of hardware, software and data storage**
- **In some schools these laboratories practically remain closed**
- **Low durability and sensation of fast obsolescence**
- ➔ **High investments and few concrete results**

Different pedagogical approaches, and different use contexts

Fundamental Requirements for ALL:

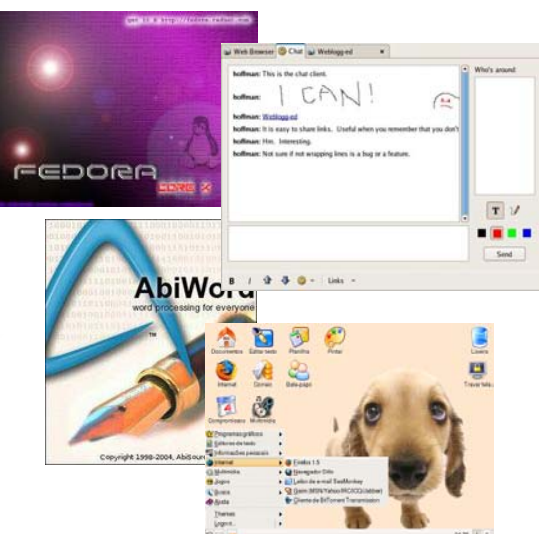
- **Low cost**
- **Robust and durable**
- **Intuitive (very easy to use, focus on WEB applications)**
- **Very easy to install, configure, reinstall, reconfigure**
- **Flexible (light, portable)**
- **Mobility (wireless connection WiFi, WiMesh)**
- **Low energy consumption**
 - **more battery autonomy**
 - **more battery durability (=> less ambiental impact)**
- **100% available e 100% connected (ONE-to-ONE)**
 - **Access to several qualified contents and tools (public and private)**
 - **Authorship socialization and valorization**
- **Hardware and Software based on OPEN Standards**
- **Possibility of use with free/open software (OS and applications)**



- **The one-to-one aproach at classroom will have a positive impact in the education quality (72% of 120 teachers from 22 different states)**
- **The educational strategies must change (77%)**
- **"The computer can substitute some things. The digital memory can reduce paper. The information comes faster, but it is not good to interact only with computers"**
- **"Mobility can be a problem, they will loose, sell, break, be robed and have mantainance problems"**
- **"A security mechanism and maintance program must be provided"**
- **"It is necessary to work with the comunity to introduce this at school"**



OLPC Software – Basic and Applications



RIGHT NOW

- All WEB resources can be used
 - Digital libraries, learning objects, web dictionaries, web enciclopedias, web collaborative learning environments ...
- Several Open/Free Educational software (some with a minimum additional development)

FUTURE DEVELOPMENTS

- Focus on Open Standards, Interoperability
- Stimulus to Free/Open Software development
- Optimized applications that consider different screen sizes and different usage modes
 - individual off-line
 - individual on-line
 - collaborative local (closer devices)
 - collaborative on-line



OTHER Related Initiatives

● COLLABORATIVE LEARNING ENVIRONMENTS

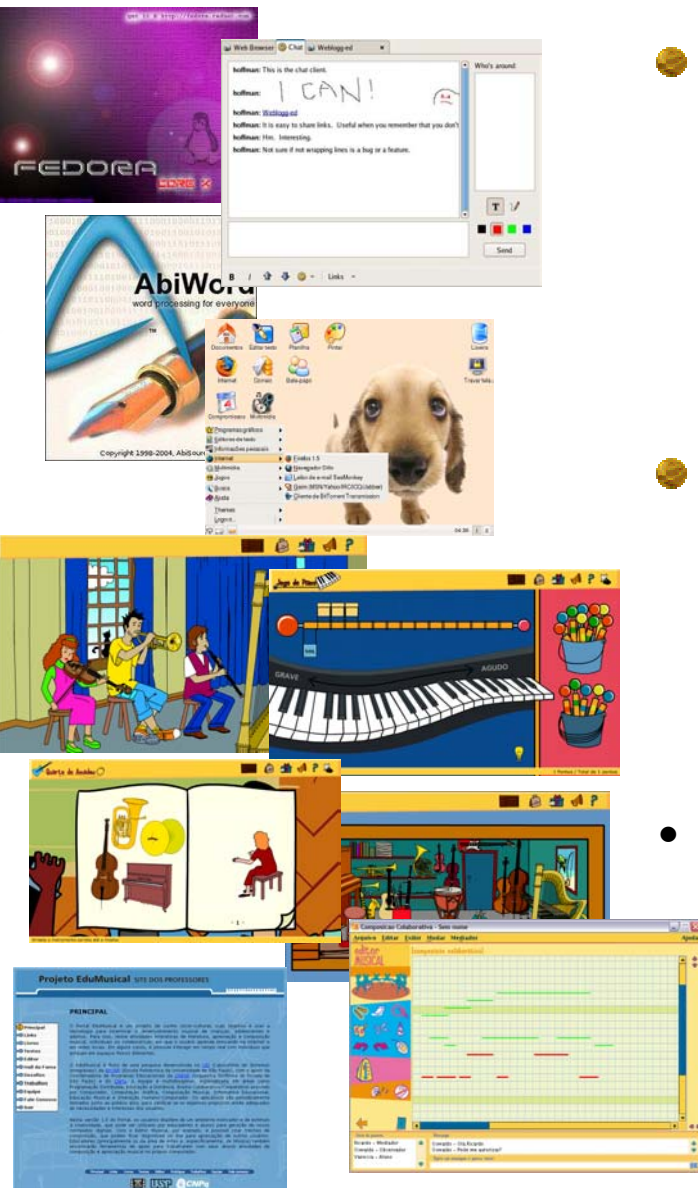
- MEC Web tools for teacher distance education (e-PROINFO, ..)
- FAPESP special program TIDIA
- Several public and private initiatives

● DIGITAL LIBRARIES AND LEARNING OBJECTS

- MEC WebEduc Portal
- MEC RIVED
- Several public and private initiatives

● DIGITAL TV

- “bigger screen” at home
- Complimentary possibilities of computing and Internet access



INTERNET Access to ALL

- As essential as electricity!

COST x DISPLAY SIZE

- It is better to have now for all students and teachers a low cost small window opened to the world, instead of remaining constrained inside four walls

ENERGY

- Less consumption is an important aspect both to enable battery autonomy without the need of recharging during scholar activities and to reduce ambiantal impact (longer life batteries)



- **Low cost computing and internet access devices (such as the 2B1 from OLPC) must be available for ALL, specially for students and teachers**
 - through special acquisition channels and in the regular market
 - Different solutions based Open Standards, same basic capabilities and interoperability
(VWBeetle x Ferrari)
- **We must intensify the efforts to offer high speed Internet connection at low cost everywhere
(INSIDE and outside school)**
- ➔ **OLPC initiative opened a unique opportunity for us to make a Revolution at Education**

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