



O impacto das TICs na educação  
El impacto de las TICs en la educación  
The Impact of ICT in education

# Evaluating Initiatives on ICTs in Education: Suggestions for a methodological approach

*Rogério De Paula, Evaluation Specialist*  
*UNESCO – Brasília*

28 April 2010

## Evaluating Initiatives on ICTs in Education: Scope and purpose of this presentation

UNESCO's challenges are:

- To continuously develop global methodologies for evaluating ICTs on Education
- To apply such methodologies in countries like Brazil

Today we will:

- Present a methodological approach suggested by UNESCO in Brazil, in order to: a) share with you some initial findings; and b) benefit from experts' comments, suggestions and examples to improve it.

# Why does UNESCO carry out evaluations? (Vision Statement)

- Evaluations should enable UNESCO to meet its mandate and become a results-driven organisation that is continually learning, through enhancing accountability, improving efficiency and effectiveness of programmes and supporting strategic policy development.
- The evaluation function at UNESCO is essentially a tool for planning and learning. It is not there simply to identify problems, but essentially to develop solutions based on key findings.

## Evaluating Initiatives on ICTs in Education: What is the logical thinking within the evaluation approach proposed today?

- Goal: Public policy on ICTs in education enhanced in relation to its relevance, impact, effectiveness, efficiency and sustainability
- Immediate Objective: Governments make use of data, information and knowledge that is relevant, credible, reliable and timely for decision-making
- Main Products: A methodology for carrying out evaluations based on UN standards and norms, and a process to use the findings of the evaluation for decision-making

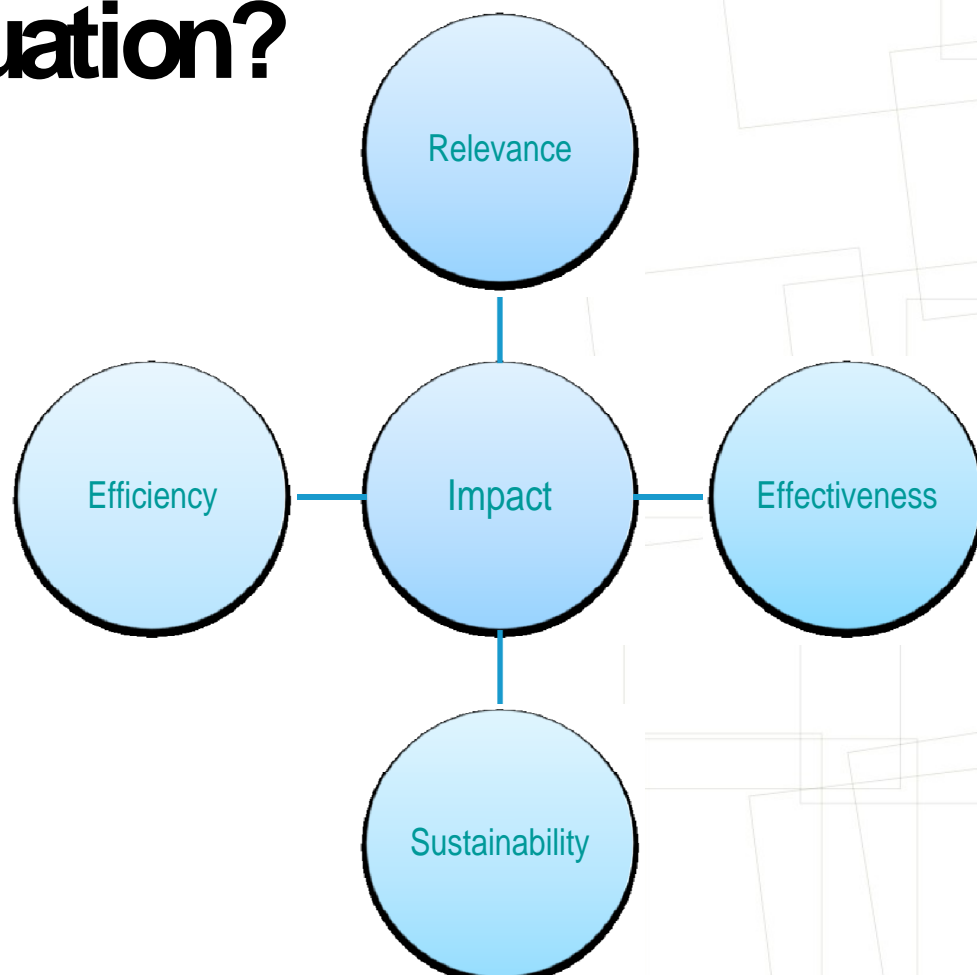
# What is meant by an “evaluation”?

- Evaluation is understood as an assessment, as systematic and impartial as possible, of an activity, project, programme, strategy, policy, topic, theme, sector, operational area, etc. It is very different from auditing !
- It focuses on expected and achieved accomplishments, examining the **results chain**, processes, contextual factors and causality, in order to understand achievements or the lack thereof.

## Should an evaluation decide on the future of ICT initiatives?

- Proper application of the evaluation function implies that there is a clear intent to use evaluation findings.
- However, an evaluation is not a decision-making process *per se*, but rather serves as an input to provide decision-makers with timely and relevant knowledge and evidence about performance and good practice.

# Which criteria are suggested for an evaluation?



# What are the general steps proposed?

## Desk Study

- Sets out basic information regarding the object of the evaluation
- Review all major evaluations of Government Programmes
- Review “State-of-the-art” regarding relevant methodologies used for evaluating ICTs in Education
- Rapid Evaluability Assessment: verify if there is sufficient measurable indicators, reliable information sources and no major factors hindering an impartial evaluation. Mainly quantitative research techniques (e.g. formulation of hypothesis, data collection)

## Hiring External Evaluators

- Establishment of an Evaluation Reference Group
- Development of TOR
- Selection process based on technical competence and value for money

## Conducting the Evaluation

- Inception report (Plan of Work) approved by UNESCO
- Preliminary Report
- Final Report

## Action Plan

- Dissemination of the results
- Consultation with major stakeholders
- Monitoring of implementation



## Desk Study- The example of Proinfo in Brazil

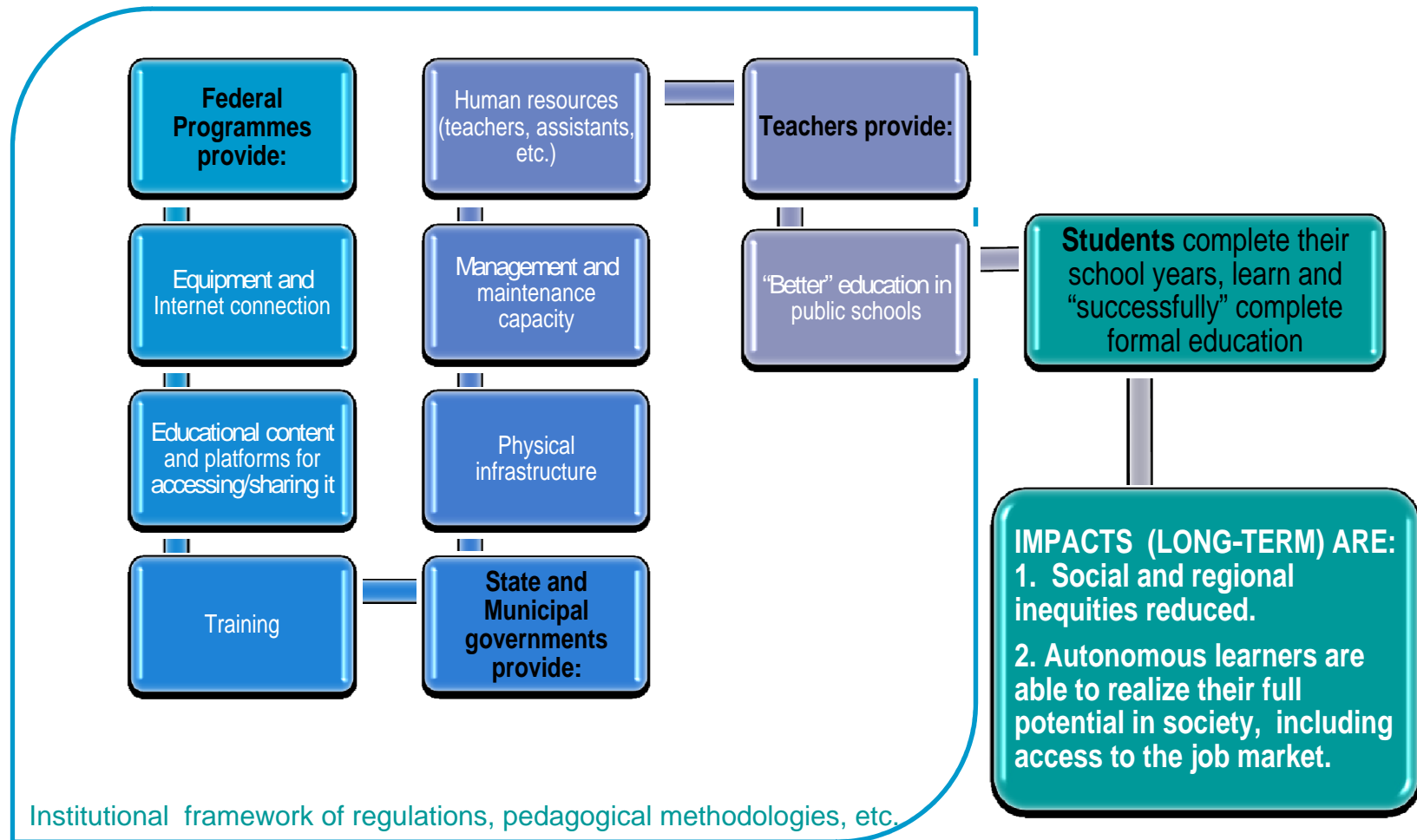
# Defining the objectives to be considered

1. Promote the educational use of ICTs in public schools (urban and rural)
2. Foster improvements in teaching and learning with the use of ICTs
3. Train educational staff engaged on the Programme activities
4. Contribute to digital inclusion by means of increasing access computers, connection to the internet, and other digital technologies, to benefit the school community and the population close to the school
5. Contribute to the preparation of adults and the youth by using ICTS
6. Foster the national production of digital educational content

*Source: Decree No. 6300, December 2007*

## Desk Study - The example of Proinfo Brazil

# Developing a simplified output flow



## Desk Study – The example of Proinfo in Brazil

### Developing guiding hypothesis

- H1 – O ambiente tecnológico implantado através de programas do governo federal oferece aos alunos, professores e gestores educacionais ferramentas e metodologias de trabalho que são necessárias e apropriadas para a melhoria do aprendizado .
- H2 – O conteúdo educacional desenvolvido por programas do governo federal vai ao encontro das demandas e necessidades dos alunos das escolas públicas atendidas.
- H3 - A capacitação em TICs e as ferramentas de apoio oferecidas aos professores da rede pública através de programas do governo federal vai ao encontro das demandas e necessidades dos professores.

## Desk Study – The example of Proinfo in Brazil

### Developing guiding hypothesis

- H4 – Professores capacitados por programas de TICs do governo federal são mais efetivos no uso das TICs para a melhoria do aprendizado dos alunos
- H5 – Alunos atendidos pelos programas utilizam de maneira mais efetiva as TICs para o aprendizado, tanto no ambiente escolar quanto fora dele.
- H6- Os gestores educacionais beneficiados por programas federais são capazes de desenvolver métodos e práticas mais efetivos para a promoção do aprendizado.

## Desk Study – the example of Proinfo in Brazil

### Developing guiding hypothesis

- H7 - O ambiente tecnológico (infraestrutura) implantado através de programas do governo federal provê o instrumental necessário a todos os alunos, professores e gestores educacionais das escolas beneficiadas.
- H8- Os insumos providos pelo programa atingiram seus beneficiários de forma rápida e com um mínimo de desperdício de recursos.
- H9 – Os processos que foram utilizados para a gestão do acesso às TICs foram executados de maneira eficiente.

## Desk Study – The example of Proinfo in Brazil

### Developing guiding hypothesis

- H -10 Os estudantes que completam sua educação nas escolas beneficiadas pelo programa tem melhores resultados acadêmicos e profissionais, bem como maior capacidade de atuar como cidadãos na sociedade da informação.
- H- 11 Os professores e gestores que se beneficiaram do programa apresentam competência profissional e autonomia na utilização de TICs para a aprendizagem
- H – 12 As instituições beneficiadas pelo programa desenvolvem capacidades locais que lhes permitem continuar com a utilização efetiva e eficiente de TICs no processo de aprendizagem, mesmo após o término do programa.



**Let's go outside UNESCO's boundaries and take a look at someone else's evaluations and methodologies!**

## Desk Study

# Review of major programme evaluations on ICTs in Education in Brazil (meta-evaluation)

REVIEW COMMISSIONED TO R. WALKER :

- Audit Report of Operational Nature: National Programme on Informatics on Education (Proinfo). The Brazilian Court of Audit (TCU), 2000.
- ProInfo: Perspectives and Challenges: Preliminary Evaluation Report. University of Brasilia (UnB), 2002.
- A computer per student: The Brazilian Experience. Lower Chamber of the Congress (Câmara dos Deputados), 2008.
- Technical documents – evaluation of TV Escola, DVD Escola e ProInfo. Bento Afonso dos Santos, 2006-2007.



What have we found?

## Examples of indicators applied in evaluations already conducted in Brazil

- **Relevance:** no practical examples of indicators to show how the initiatives link with the beneficiaries' requirements and main challenges of the communities served.
- **Effectiveness:** number of IT technicians per school; percentage of computers connected to the internet, percentage of teachers trained (TCU, 2000).
- **Efficiency:** idle time of computers, number of students per computer, and "sufficiency" of educational content (TCU, 2000) ; opinion polls on a number of infrastructure items and the performance of human resources (UNB, 2002).
- **Impact:** measured through opinion polls (UNB, 2002).
- **Sustainability:** no examples of relevant indicators were found.

What have we found?

## **Review of major programme evaluations on ICTs in Education in Brazil (meta-evaluation)**

MAIN PRELIMINARY CONCLUSIONS FROM META-EVALUATION:

- None of the main evaluations reviewed include the 5 UN criteria
- All evaluations have a tendency towards evaluating effectiveness (outputs)
- There are different interpretations of “efficiency”
- None considered evidence-based indicators to show **IMPACT ON LEARNING** or **SUSTAINABILITY**
- **IN SUMMARY: AN EVALUATION BASED ON THE 5 UN CRITERIA WOULD ADD VALUE TO THE BRAZILIAN CONTEXT**



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Where are we now?

## Review of OTHER RESEARCH AND SURVEYES on ICTs in Education in Brazil (meta-evaluation)

REVIEW COMMISSIONED TO R. WALKER ON:

- *Consolidation of Communities of Practice: a case study within Proinfo.* Curitiba, Centro Federal de Educação Tecnológica do Paraná, Jorge Luiz Kimieck, 2002.
- *Proinfo and Teachers Training in the city of Goiânia,* Alex Santos Bandeira Barra, 2007.
- *Evaluation of the Programme TV Escola,* Fundação Cespe, 2008.
- *The Use of Computers and the Internet in Public Schools in Brazilian State Capitals,* Fundação Victor Civita, 2009.

What have we found?

## Review of other research and surveys on ICTs in Education in Brazil (meta-evaluation)

MAIN PRELIMINARY CONCLUSIONS :

- There are mixed and sometimes conflicting conclusions (Neri 2003 X Dwyer 2007)
- Some correlation between access to ICTs and educational performance, but not enough evidence of a causal relationship (several uncontrolled variables)
- Major challenge seems to be evaluating capacity development in its broadest sense, in particular organizational learning (schools as learning organizations within communities, not only as *teaching organizations*)
- There is room for engaging students more deeply, since they have been often represented through interlocutors such as teachers, school directors, etc..

## Challenges: one evaluation, but several policy goals and possible approaches

- Look at “pro-equity” results in the country (Daniel Wagner, WB, 2005) **AND/OR** micro-studies ensuring that the use is effective (Pisa Studies, OECD 2005)
- Focus on the evaluation of teacher’s ICT ‘s competencies (M. Inês Bastos, 2010) **AND/OR** students’ educational accomplishment (EU, Report, 2006)
- ICTs usage in public schools **AND/OR** autonomous use anywhere
- Hard evidence, quantitative approach (TCU 2000) **AND/OR** perceptions and opinion polls (Unb, 2001)
- Look at the back mirror **AND/OR** focus on case studies that show successful new directions ?

## Where are we now and where do we go from here?

- Agreement with the Federal government (guaranteed independence, full operational support and commitment to implement relevant recommendations)
- A few preliminary products are ready:
  - Desk study
  - Database of key reference documents
  - Paper: Meta-analysis of major evaluations in Brazil
  - Paper: Review of the “state-of-the-art” on evaluation methodologies

Despite all difficulties,  
we will continue:

...investigating...  
...discovering...  
...learning...  
...sharing...  
...changing.

Thank you !



"Mire todos los cálculos, anotaciones teóricas  
y equipamientos de laboratorio, sargento...  
Sí, la curiosidad mató a estos gatos."



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# Evaluation Criteria

- **Relevance:** The extent to which the objectives of an intervention are consistent with the organization's goals and strategies, beneficiaries' requirements and country/community needs.
- **Efficiency:** A measure of how economically inputs are converted to results.
- **Effectiveness:** The extent to which the intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance.
- **Sustainability:** The continuation of benefits from an activity after major assistance has been completed.
- **Impact:** The primary and secondary long-term effects of an intervention.

## **Core Competencies for effective teachers (UNESCO, 2008)**

- Policy and vision
- Curriculum and assessment
- Pedagogy
- ICT
- Organization and Administration
- Teacher Professional Development

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