# ICT POLICIES AND EDUCATIONAL INNOVATION: PRACTICAL IMPLICATIONS IN COLOMBIA

Gary Alberto Cifuentes Álvarez
University of Los Andes
Colombia

**Abstract**

This paper highlights the relevance of an underexplored dimension in ICT integration: the policy enactment of educational innovation. More concretely, this work focuses in the complexity of policy enactment in local contexts in which ICT policies yield uncertain effects. Drawing on an empirical study in one Colombian region, the findings reveal a set of issues related to policy translation and policy positions, two key aspects of Stephen Ball's policy enactment theory. The findings and reflections invite the expansion of research in the field of ICT polices. This work is useful for scholars examining ICT integration, school administrators and policy makers.

## Introduction

Colombia is a country with a long history in the formulation and implementation of ICT policies for education (UNICEF, 2014). In the last few years a national system for educational innovation was released as an attempt to integrate disparate efforts related to ICT integration. Alongside nation policy, many different local programmes were developed across the country. This has led to an educational environment rich in a diversity of ICT policies. Scholars, for their part, have attempted to assess whether these national and local efforts to improve educational quality through ICT implementation have been successful. Drawing on a policy enactment approach, I will focus my analysis on the local context of Colombian ICT policies in order to understand specifically what effects occur at the level of translations and positions from different actors. Before going into the findings, I will begin with a brief description of this theoretical framework, and then I will describe the research context in which I undertook the analysis.

### The Policy Enactment of ICT Integration: An Open Field of Study

When approaching the field of educational policies, it is important to remain note that policies can be studied in terms of stages or phases. Considering this policy-cycle, scholars focus on the formulation, implementation and evaluation of policies, involving different paradigms, questions and tools for their analysis (Honig, 2006). Sometimes, scholars become devoted to a particular stage, privileging one paradigm or approach among the others. This work focuses mainly on the realm of implementation studies but uses a theoretical approach that challenges the term *implementation*. The following section offers a short account of policy enactment theory to expand on the critique mentioned above.

**Beyond Implementation and Impact Evaluation**

It is common that scholars in education policy analysis develop their work in the most well established research paradigms: positivism or critical theory. The first paradigm considers impact evaluation and cause effect relations within education policies (Gertler, Martinez, Premand, Rawlings, & Vermeersch, 2011). What is central in this approach is a technical account of how policies are implemented, what factors affect such implementation and how to measure those factors (Granger, Morbey, Lotherington, Owston, & Wideman, 2002; Hjern, 1982;). The second paradigm considers a critical account of education policies, applying methods such as critical discourse analysis and Marxist approaches that focus on questioning hegemonic power exerted from governments over specific populations (Fairclough, 2003; Gramsci, 1971).

A policy enactment theory (Ball, Maguire, & Braun, 2012) challenges the first paradigm, but at the same time represents an alternative approach to critical theory. In relation to the first paradigm, the idea of a linear and technical implementation overlooks that policymaking occurs in local contexts. Beyond receiving and enforcing a document, policy enactment is comprised of at least three different dimensions: first, it addresses materiality, which considers contextual factors like historical and local circumstances, the existence of buildings, infrastructures, technologies and any kind of facilities where policies arrive, as well as professional cultures like those of teachers in a given school. Second, the discursivity of policies is considered. Hence, policies go beyond the problem of agency or the authorship of an education policy document (who wrote it and what intentions are behind). What matters in discursivity are the procedures to produce truth and knowledge. Inspired in a Foucauldian tradition, the question of discursivity is not what the *meaning* of a particular policy is, but what it *does* and what subjects it produces. As Ball (2006) mentions, policies are about what can be said and thought, but also about who can speak, when, where and with what authority. Finally, the hermeneutics of policies is related to the interpretation and translation of education policies. In this work, I will focus mainly in the last dimension as a previous work has shown the potential of tracing this particular facet of policy enactment when analyzing ICT policies (Cifuentes & Valero, 2016).

**The Hermeneutics of Policies: Translations and Positions**

Once a policy has arrived at an educational institution, there are two possible practices that should be considered in terms of a hermeneutical analysis. First, what such policies are telling us, what is the understanding we can achieve from those words, key terms, guidelines, standards, etc. This is called the interpretation of a policy. Conversely, policy translation goes beyond the literal meaning of those words, key terms, guidelines or standards; it implies concrete practices and mobilizations that take place within the institution in response to a policy document. What is fundamental here is that actors do not simply react to policies through passive enforcement; rather, there is a creative movement in which different actors rearrange the organization. This is called a policy translation, and it implies an active readership that does not assume that

policies are closed packages to be enforced, but that they also can be creatively distorted and situated in a local context (Ball et al., 2012).

Along with this feature, the hermeneutics of policies also refers to the variety of positions that emerge when a policy arrives at an institution. Thus, policy enactment theory deploys a typology of actors that challenges our limited assumption of *receivers* of policies. For instance, there are: *narrators* of policies, those explaining and making sense of policy documents (even incoherent ones); *enthusiasts* of policies, those leading and promoting polices in their own practice through charismatic enthusiasm; *critics* of policies, who challenge the scope, meaning and practicality of a particular policy; and also *transactors*, such as administrative staff dealing with policies in relation to limited resources that set limits and possibilities for their enactment. As Ball et al. (2012) mention, "Translation activities need to be funded and staffed" (p. 58). This typology is provisional, and is likely to be extended and revised. As a matter of fact, policy positions in higher education have been analyzed to understand how ICT policies produce certain subjects and mobilizations (Cifuentes, 2015). Conversely, the following policy enactment analysis is done in the specific context of interest in this study: elementary schools in Colombia.

### ICT Policies in Colombia: A Research Context

As stated in the introduction of this paper, Colombia has a long history in the formulation of ICT policies for education. As I have stated in previous analysis, this is a country with a will to innovate that has been settled through different ICT policies to improve education (Cifuentes, 2017). Different programs and national strategies for ICT integration reveal an interest not only from the government but also from the civil society. In 2007, a set of initiatives such as virtualizing academic programs, training teachers on ICT and producing digital educational resources, were spread all over the country. In 2013, the government launched a National System for educational innovation with ICT as a way to unite these disparate efforts and align to similar initiatives in Latin America (OECD/IRB/The World Bank, 2012). Figure 1 shows five different strategic areas such as teacher professional development, promotion and enhancement of research, management of digital educational content, e-learning, and ICT availability and access.



*Figure 1*. National System for Innovation with ICT (Source: NME, 2013*).*

Compared to other countries in Latin America, one could say that Colombia has an increased level of integration of ICT policies beyond this particular system for innovation. As the following graph shows, in this country it is likely to find not only official national policies for ICT, but also local educational institutions enacting them.

**LATIN AMERICA AND THE CARIBBEAN (17 COUNTRIES): INDEX OF INSTITUTIONALIZATION OF POLICIES FOR ICTS IN EDUCATION**
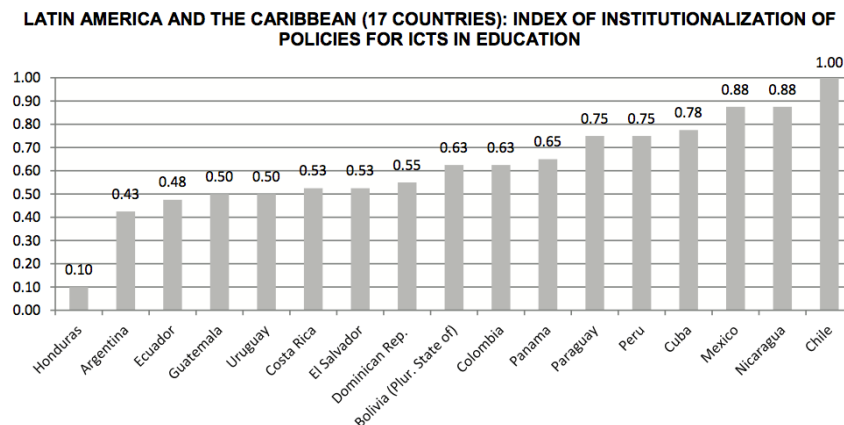


Source: Prepared by the authors using ECLAC data, Survey on policies and practices for ICTs in education.

*Graph 1.* Index of institutionalization of ICT policies (Hinostroza & Labbé, 2011).

Despite these efforts to integrate ICT, different factors such as change of government or the complexity of local policy-making call into question of whether Colombia has achieved a level of e-maturity for innovation in education. In this paper, we do not problematize if ICT integration for teaching and learning enhancement increases (impacts) academic achievement. Instead, what we problematize is the variety of mobilizations within institutions as a response to the discourse of educational innovation in the context of a national system that attempts to improve education.

To understand how different initiatives fostering innovation arrived at local institutions, and to understand policy enactment, a three-year project monitoring regions in Colombia was undertaken. In this country, the public educational institutions are distributed in 32 departments (provinces). This project selected two Colombian regions due to their geographical and cultural differences (not for comparison purposes). In each region, a sampling of institutions participating in at least three nation-wide ICT policies formed the sample. The following glossary deploys the name, acronym, and objective of those national policies. One of the assumptions for the research was that the coexistence of several ICT policies within an institution should allocate an appropriate context for analyzing policy translation.

**Glossary of ICT Policies in this Study**
- CPE: Similar to One Laptop per child, this policy provided computers for educational institutions all over the country.
- PVD: Provided three types of rooms with devices and other facilities in educational institutions across the country.
- CREATIC: A teacher-training program to develop ICT competences in educational institutions all over the country.

The following findings focus on only one of the selected regions as the project is still in its first stage of analysis. As a research design, a multiple case study was undertaken. In total, ten (10) different institutions were selected after fulfilling the required criteria (public schools, participating in the three national ICT programs). In each setting, interviews with the principal, the ICT coordinator and the teachers trained as part of the ICT national programs were conducted. Equally important was the interview with some of the coordinators of these programs that were occasionally appointed on each institution. The visit to each setting also involved taking an inventory of facilities for each ICT policy initiative. For instance, some of these programs included the allocation of a room for PC, laptops, media labs, Smartboards, etc. The research design was based on thematic analysis looking for patterns in the cross-case studies (Yin, 2003). The following section summarizes some preliminary findings depicting how different institutions enacted ICT policies for educational innovation.

## Some Preliminary Findings on ICT Policy Enactment

### Policy Translations

For each school, we found different kinds of mobilizations in relation to different kinds of internal and external artefacts. In the following we describe concrete examples of governmental initiatives that were interpreted but also translated through the actions of a variety of actors.

Quality assurance was both a discourse and a common practice in some of the institutions we visited. As one ICT coordinator told us, "We have a format for everything; we follow every process with a standard procedure." In the interview the principal mentions that such policy was not mandatory for all the educational institutions, but that she managed to integrate it throughout the whole process (academic and administrative) in order to qualify the institution: "At the beginning of the year every student receives his grid so he knows the content of what he will study for each course, so we have a strict control of everything." As Figure 2 shows, a concrete translation of this quality assurance discourse was identified at the entrance of the school: the logo of this national certification was located beside the coat of arms of the institution. As stated above, practices of translation were not only visual but also organizational in terms of daily activities performed within the institution.



*Figure 2.* Case of policy translation.

A widely distributed national ICT policy (CPE) provided computers, laptops and teacher training. It is worth mentioning that there has been both praises

and critique of this ICT policy regarding the extent to which it achieves its goals. What we found was unintended uses for some of these devices in schools. One of the institutions we visited was carrying out the election for the student council. On that particular day, the computer room (provided by CPE) was allocated as a voting room for students; for this kind of activity special software was installed on these computers (see Figure 3). One could think such mobilization is not far away from the expected use for education; nevertheless such examples of policy translation contribute to the current controversy on the real impact of these computers for learning enhancement.



*Figure 3*. Case of policy translation.

A similar case reported in our institutions came from PVD. This program provided three special rooms allocating computers and special devices for content production. In one of the institutions a PVD room equipped with computers has also been used for applying a national standardized tests on students' competences named SUPERATE: "In this institution the teachers from math and language use these computers for this purpose. PVD was very useful as working offline implied downloading the application to obtain the information, collect it and send it afterwards," stated an ICT coordinator.

As we will discuss in the next section, every policy position depends on the personal background and status within the institution. In our analysis of policy translations, we sought to explore what kind of creative mobilizations emerged beyond literal enforcement of these national programs in the institutions. We found that the discourse of *the innovative teacher* had a strong role both in these policy documents and in the kinds of mobilizations of some actors. The teacher is in fact the actor who deals most frequently with just "implementing" technology in the classroom or creating alternative ways for enacting the discourse of the *innovative teacher*. In our interviews, some of the teachers' experiences with technology were a matter of passive reception but in many other cases we found possibilities for educational innovation:

> The suitcase delivered by CPE is useful for my practice, specifically in statistic spreadsheets help me to organize tables and different ways to display; Geogebra is also useful for graphing and variation. I think all this helps them because graph memory makes the process easier and more comprehensible, so the student can understand better.

**Policy Positions**
Comparing three different roles within the institution -- the principal, the ICT coordinator and teachers -- the value of an ICT policy was grounded on the

practice and status of each one of them. A principal's appraisal of the impact of teacher training and students learning is aimed at reporting institutional performance to external organizations (i.e., Ministry of Education, Provincial and Major's office, etc.). An ICT coordinator values technical possibilities for enhancing teaching practices mainly in relation to devices and software. Finally, a teacher looks for best practices with technology to enhance teaching and learning. Despite these general findings, there are nuances in each case: some principals were also prone to monitoring teaching practices instead of reporting institutional performance; some teachers were concerned with technical features as they could see opportunities with new devices; and some ICT coordinators also paid attention to external actors that became allied or became obstacles for educational innovation. All in all, the following typology, inspired in Ball's work (2006), is as he said, not exhaustive but provisional and open to revision.

**Narrators**. First of all, we found individual acting as *sense makers* of ICT policies. No matter when or how these policies arrived, these narrators tried to find coherence between these policies. In some cases they also declared how these policies should work. This comment from one of the narrators offers an idea of this: "I think this program should be for all the teachers in the institutions, not all of them have been involved but they should (…) if you receive this particular training, therefore you can take advantage of the other two programs." These narrators also found ways to optimize resources such as infrastructure, expand possibilities using open access educational resources or create communities of practice through the opportunities held within these external programs. In other cases, this policy position implied the description of personal change. One interviewer said: "The change was mainly in me, in the way I use tools, in elaborating strategies. Once in a while there are some colleagues that look at what you're doing, how you are doing things, but all in all, I think I grasp such training for my own daily practice."

**Critics**. At all levels, we found critiques of these policies. However, there are different kinds of critique depending on the individual's background and status in the institution. Since this study focuses on education policies for ICT integration, the nature of these programs shows that an ICT coordinator is the actor whose role gives him or her the criteria to assess the quality of technical features. These actors typically had critiques of teacher training programs that analyzed issues like the relevance of content or technical features of equipment (e.g., lack of technical support from the government or software updating packages). ICT coordinators also mentioned that in themselves, these national programs were a good initiative from the government, but when they arrived at the institution, they were not integrated. Something exemplifying this perceived disconnection between ICT policies was the installation of technological devices in special classrooms and simultaneously having teachers trained that were not using them. As Ball et al. (2012) mention in relation to this policy actor, critiques can also give birth to new ideas and perspectives on current policies. For instance, in our study, from each critique came new ways to reframe those policies: "The idea of teacher training is good in itself but I say that it should be reoriented to content design."

**Enthusiasts**. According to the position of each actor, there are policies that deserve more attention and approval. One of the most appraised programs was considered necessary to achieve educational innovation as it included many key elements including infrastructure, facilities and devices, as well as a coordinator appointed on site in each institution. In the field of ICT integration, technologies represent promises associated with educational change and enhancement of teaching and learning, etc. As a result, we found at least two situations: disappointment after receiving failed programs or enthusiasm and expectations when a new program arrives. When responding to the question "Do you think that teacher training is useful?" an enthusiast answered, "Yes, definitively. When they receive such training, teachers understand there are other ways beyond the traditional 'chalk and talk' (…) there are millions of apps for all the subjects you can imagine." As Ball et al. (2012) mention, enthusiasts become policy models or example for others; in our research, trained teachers on ICT were role models for innovation whose practice was shaped or transformed somehow. When a teacher was asked how she changed her practice after participating in a training program on ICT, she stated: "I design my own course contents. Actually, it depends on the subjects because I also teach physics. For instance, I use EducaPlay to design that content. I also organize my courses in Moodle where I assign content and activities." Therefore, just as we found examples for enacting the *innovative teacher* discourse, we also found enthusiastic teachers advocating such innovation in their daily practice.

## Conclusions

Impact assessment represents only a short account for all the complexity that scholars can study related to education policies in local settings. In this work, I have analyzed one particular kind, i.e., ICT policies for education. In the current context of national systems for educational innovation all around the world, a main concern for governments is the enhancement of teaching and learning processes through ICT integration. Hence, ICT policies are operationalized as national programs and projects like those we reported in Colombia.

This work offers an account of the policy play (Koyama & Varenne, 2012) that is experienced in different local settings in which ICT policies arrive. I have focused on policy translation and policy positions, both belonging to the hermeneutics of policy enactment. Beyond policy implementation, the analysis undertaken in this study allows us to understand uncertain effects of different policies according to the different positions of actors.

From a positivist framework, scholars are only focused on matters of facts (how to measure impact of one specific educational program). However, the research community should start paying attention to the particular enactment zones (Spillane, 2004) instead of merely measuring goal achievement and impact assessment of isolated policies.

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**Author Details**

Gary Alberto Cifuentes Álvarez
gcifuent@uniandes.edu.co