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Initial Education in Colombia: Using Digital Learning Environments to prepare on-the-job Practitioners

Alvaro Galvis
Professor
University of Los Andes
Colombia

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Dr. Gregory T. Papanikos
President
Athens Institute for Education and Research

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Alvaro Galvis
Professor
University of Los Andes
Colombia

Abstract

Initial Education in Colombia (IEC) serves 0 to 6 year-old children and their families. IEC is a coordinated effort among different providers, including institutions and people from the education sector, welfare sector, and health sector. A multi-sector commission discussed and agreed on national standards to offer high quality initial education to every child who is in range of zero to six years of age. There are many service providers to this population under contract from the corresponding public authorities but not all of them are properly qualified. These IEC agents are distributed throughout the nation, which implies through urban and rural areas of 1038 municipalities.

This presentation shares the design, pilot testing, implementation of and lessons learned from digital learning environments created to qualify educational agents that collaborate in IEC across the nation. The system was created building from real-life video cases taken from IEC organizations that provide initial education in one of two modalities: institution-based or family-based initial education. Digital Learning Environments created for on-the-job training of IEC practitioners include a set of nine modules per modality of service. Three of them frame the action (introduction to technology tools to be used, orientation to basic concepts of initial education, and introduction to each of the IEC modalities); the remaining six aid in the understanding and application of national standards for IEC in context, one set of standards per module.

Key Words: Colombia, initial education, digital learning environments, train the trainers, on-the-job professional development of education agents.

Introduction

"Initial Education" (education for zero to six year-old children) has become a very important element of Colombian education, welfare, and health sectors. Studies (UNICEF, s.f.) have established that essential human functions (i.e., vision, hearing, talking, high order cognition) are developed during the first year of age; that during the first six years of growth nearly 85% of neural connections occur; and that investment in human capital has the best return rate if it is done during early childhood. The National Policy on Early Childhood Education (Colombia, DNP, 2007) states that Initial Education—IE—seeks to provide significant experiences to [zero to six year-old] boys and girls. IE, in essence, deals with the care and coaching of children´s development in safe and healthy social environments that nurture high quality educational experiences.

Reasons such as the above motivated the Colombian government to institutionalize IE (Colombia, DNP, 2007), by nationally expanding and funding integral attention to early childhood in two complementary educational modalities: family-based and institutional-based. Family-based modality is provided by *madres comunitarias*[1] to children and their families when they cannot be served by IE institutions. Institutionally-based IE is provided by local centers where kids receive health care, nutrition support, and initial education in joyful and creative learning environments.

The Challenge

The National Public Policy on Early Childhood Education (Colombia, DNP, 2007) and the National 2006-2015 Educational Plan (Mineducacion, 2007) provide the framework for a multi-sector strategy named *De cero a siempre* (in English, *From zero to forever*), strategy that is focused on creating the appropriate conditions for IE.

The *De cero a siempre* Inter-sectorial Commission produced a shared conceptual framework for providing integral attention to zero to six year-old children, specifying quality standards for each of the two integral attention modalities (Mineducacion, 2012). Each of the two modalities includes six components, each of them with a set of standards to be understood and applied. A total of 45 standards are to be applied in the family-based modality, and 57 in the institutional modality, and, as shown in Table 1.

Aditionally, twenty five organizations, 9 public, 15 private, and 2 inter-governmental, signed a collaboration agreement aimed to foster the sustainable implementation of the early childhood integral attention service (MINEDUCACIÓN, 2013). This alliance integrates technical, physical,

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[1]*Madres comunitarias* (MC) are mothers who take care in their own homes of children who live in their neighborhood, around 14 children per *MC*. The State sponsors attention of these children by providing training to MC, as well as food and health care for children.

administrative and economic resources devoted to IE at the national and territorial levels.

Having a clear understanding of key components per modalities of attention, and standards to be accomplished per component, along with shared governance and financial strategies, the challenge became how to prepare each of the IE educational agents in the appropriation and application of IE standards, depending on the IE modality in which they collaborate.

This challenge is multi-faceted: from the content perspective, each institution has to have properly trained multidisciplinary teams to be able to accomplish either 45 or 57 IE quality standards (see Table 1). This implies that each person, depending on his/her role at the IE organization, should be able to demonstrate knowledge of the standards directly related to his/her role; each IE group should be able to demonstrate competence in the application of all quality standards per applicable modality of attention. From the technological perspective, each person /group to be trained needs to have access to technology-based educational resources that can be used in their local environment, since rural and suburban areas may not have Internet access with high bandwidth. From the assessment perspective, each IE organization needs to be able to demonstrate competence applying the standards to its institutional specific case.

Table 1. *Quality Standards per Component per IE Modality*

Component	Quality standards per IE modality	
	Family-based modality	*Institutional modality*
Family, community, and social networking	Standards 1 to 7	Standards 1 to 6
Health and nutrition	Standards 8 to 18	Standards 7 to 21
Pedagogy and educational processes	Standards 19 to 23	Standards 22 to 27
Human capital	Standards 24 to 27	Standards 28 to 31
Educational and protective physical environments	Standards 28 to 36	Standards 32 to 48
Management	Standards 37 to 45	Standards 49 to 57

An additional challenge deals with relevance of content to be studied. Standards to be understood and applied are significant only when trainees have the appropriate context, which is not always the case. In this way if they do not know what is meant by a given concept, it is very likely that they lose the essence of the standards in which the concept is to be applied.


Content Development

Three complementary strategies were implemented in order to overcome content-related hurdles: visualization of IE concepts and their relationships via concept maps, creation of video-cases for each of the components per IE

modality, and development of self-assessment tools, per component per modality

IE Concept Mapping

Each of concepts behind IE standards per component per IE modality were explained /illustrated via concept maps such as the one included in Figure 1. Each concept has either a text or video-based explanation, as well as links to related concepts.

Figure 1. *Concept map, visualizing key concepts and their relationships*
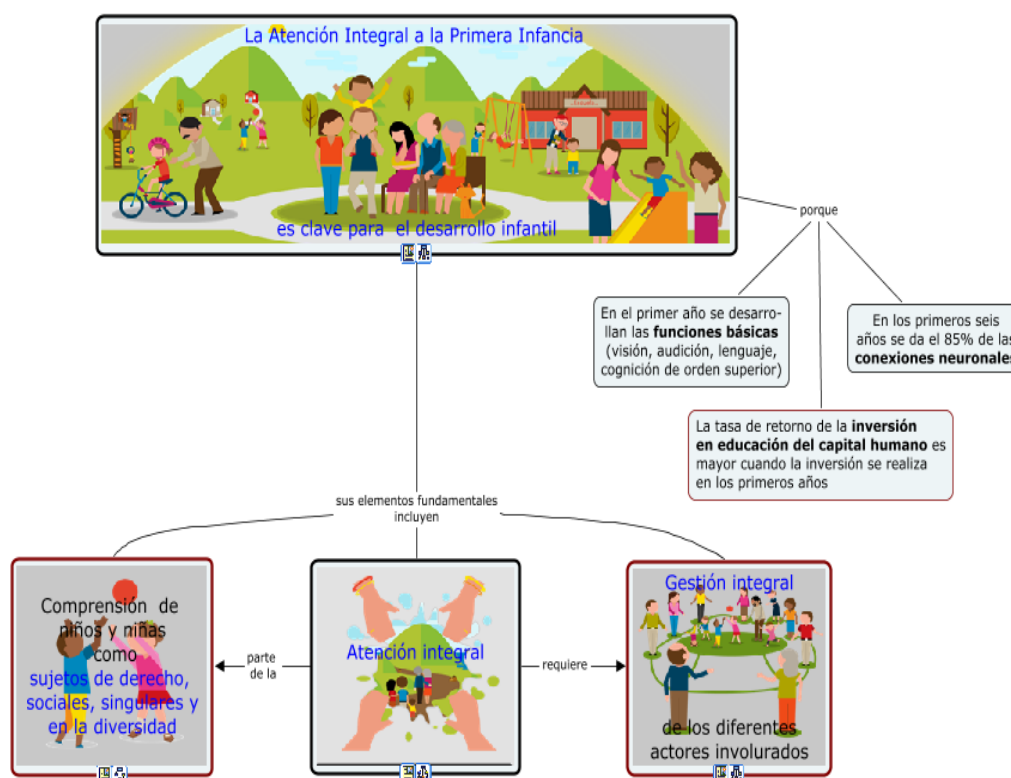
IE Video-case studies

IE organizations practicing family-based or institutional IE modalities were asked to let a crew of IE content experts + videographers visit their local operations for one or two days. This permitted the capturing of video episodes related with each of IE quality assessment components per modality, as well as to interview the people involved, reflecting on their own practices. Informed consent forms were given to institutional authorities, educational agents, parents and their children; those who signed were included in video recordings. Two IE organizations opened their doors to course materials producers; in this way they were able to illustrate with real-life practices each of the standards for each of the components per IE modality.

By the end of the recording and editing process, each one of the Quality Assessment Components per IE modality got a set of four to six video

episodes, each three to five minutes long with the corresponding transcription of dialogues, plus orientation questions to focus the attention of video viewers. Figure 2 illustrates how video clips are linked to a given quality assessment component in a given IE modality.

Figure 2. *Video Clips give access to Real Life Scenes for a given IE Component*
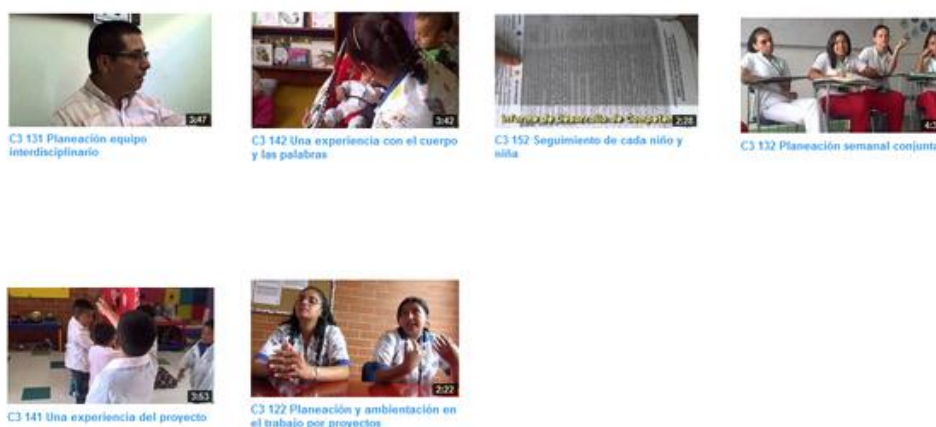
IE Quality Self-assessment Tools per Component per Modality

   A set of templates were prepared to help course participants self-assess their own IE practices. Depending on the IE modality, a different set of templates were provided. **Figure 3** illustrates how to self-assess standard #1 for the "Familia, comunidad y redes sociales" component.

Figure 3. *Quality Self-assessment Tool*

   Based on answers to each of the standards´ indicators, the system calculates level of performance per component and visualizes the status of the

institution in regard with each of the six IE quality assessment components. Building on quantitative self-assessment results, participants are required to propose action plans that help to increase IE strengths and reduce IE weaknesses.

Course Implementation

Knowing that participants in the course do not necessarily have Internet access, two versions of curriculum materials were produced: One of them is a stand-alone system in which course participants have local access to all digital materials and are invited to discuss their findings in their local community of practice. There is also an online version of curriculum materials, where interaction with other participants and course facilitators is possible using a virtual learning environment.

Figure 4. *IE Quality Assessment Components, Course Structure*


The course structure is the same for both versions, as it is shown in Figure 4. A menu-driven graphic interface gives direct access to course modules. The

first two (squared in red) are introductory modules, the third one (squared in blue) is the conceptual module, and the remaining six modules are IE quality standards components.

Depending on the course version, participants have access to one or two of each component´s learning spaces, as shown in Figure 5. Both versions offer access to digital materials per component (in Spanish, "Materiales de estudio"). Each learning space includes a study guide, a template to observe and reflect on video clips per component, as well as a multimedia-based tutorial that accomplishes three functions: (1) it supports learning about each of the IE quality assessment components; (2) it promotes reflection on video clips that Illustrate each of the standards for the corresponding IE component, and (3) it provides means to apply knowledge about each IE component to self-assessment of IE practices. Squared in green in Figure 5 there are two interaction spaces, one to share and discuss findings about concepts and video clips per component, and another to share and discuss conclusions from the application of the self-assessment tool. Stand-alone version invites participants to discuss their findings in their own local community of practices.

Figure 5. *Internal Structure of Course Materials*
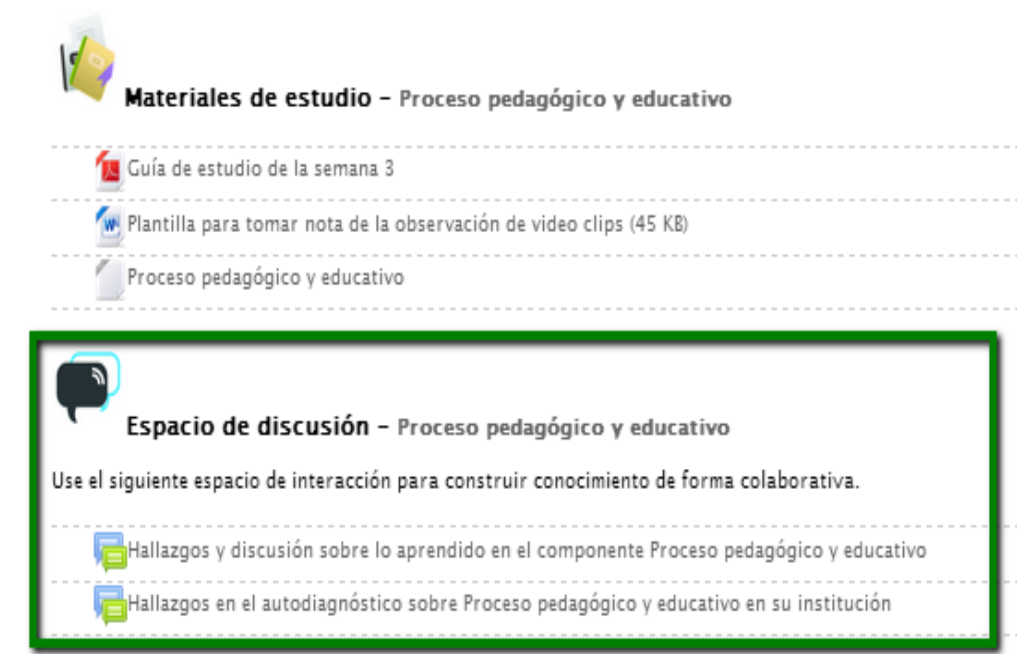
Course Materials Debugging and Pilot Testing

Two groups of people were involved in the formative evaluation of course materials. With support of IE leaders from the *Cero a Siempre* Inter-Sectorial Commission, course developers were able to recruit nearly 15 IE content experts and 350 representative IE educational agents.

In the present study, with the first group we conducted one-on-one assessment of curriculum materials; based on findings we fine-tuned each of the modules and produced a revised version of course materials. The most significant contribution from this testing dealt with reflection and discussion questions, which became grounded on video episodes and related IE standards. A subgroup from these course reviewers became online course facilitators for the pilot testing.

With the second group, we conducted, in parallel, twelve two-week pilot tests. Each of the tests devoted the first week to review and discuss about content from the three initial course modules (see Figure 4). This made community building possible among participants, generated a common frame of reference, and ensured good understanding of tools for learning. The second week was devoted to in-depth exploration and discussion of video-clips, standards, and assessment tools for a given IE quality assessment component. All participants received initial and final surveys, in order to learn about them, their roles at IE organizations, as well as to get feedback about this learning experience.

The above pilot testing strategy was very successful in terms of overcoming the limited amount of time available at the end of the year, since only the first two weeks of December 2013 were available to test course materials. This experience allowed each of the nine modules per modality of IE to be tested, but did not generate findings about the implementation of the nine-week course that was prepared for each of the two IE modalities.

Feedback collected was very instrumental illuminating elements to be solved per course module. During the first two months of 2014, the course development team devoted its efforts to polishing details and to ensemble a coherent set of curriculum materials to be used by IE educational agents across the country. Two versions—standalone and online—of course materials for each of the two IE modalities are available to be used in large scale.

Looking Forward

The *Cero a Siempre* Inter-sectorial Commission has accomplished the goal of having a fully tested and documented set of materials that help IE education agents learn about IE standards per component per modality. This is just the beginning of a new journey, in which organizations from all over the country must be involved if they want to be certified by the State as providers of IE services. New challenges emerge, and it is helpful to highlight two that might become critical success factors.

- Setting up a network of IE online course facilitators. Before nationally expanding the use of prepared curriculum materials it will be necessary to build a distributed network of IE experts that know how to use these materials, both in standalone and online versions. The problem is not technical, since from the feedback

received most technical issues were solved. We discovered it is more a pedagogical /managerial problem, because course facilitators should be able to maintain healthy communities of learning and should also be able to engage them and their organizations, in reflective processes that lead to IE quality assessment.

- Setting up a network of IE certifying organizations. Course materials will allow each organization to self-assess accomplishment of standards per IE component per modality and to generate improvement plans. However, to be certified by the State, a local authority should verify the status and create follow up strategies. This goes beyond the course scope but will be an excellent incentive to promote individual and group participation in on-the-job professional development.

From the conceptual perspective, a great improvement opportunity deals with what Donald Schön (1998) calls reflective practice. The idea is that people viewing and discussing interactive video cases documented by course creators become reflective practitioneers on their own IE practices. Quantitative self-assessment tools provided by the course may be a good frame of reference to share about current IE practices and to discover how to improve them, but qualitative analyses will generate new understandings and action lines. Local communities of practice will be very important for on-the-job training to foster continuous institutional improvement.

References

Colombia, DNP. (2007, diciembre 3). *Documento CONPES Social 109 Política Pública nacional de Primera Infancia "Colombia por la Primera Infancia".* Retrieved 04 17, 2014, from Consejo Nacional de Política Económica Social: http://www.minedu cacion.gov.co/primerainfancia/1739/articles-177832_archivo_pdf_Conpes_109.pdf

Mineducacion. (2007, Junio-Agosto No. 41). *Plan Nacional de Educación 2006-2015 - Colombia, desarrollo infantil y educación Inicial.* Retrieved 04 17, 2014, from AL TABLERO, periódico de un país que educa y se educa: http://www.Minedu cacion.gov.co/1621/article-133917.html

Mineducacion. (2012, Julio). *Desarrollo integral en la primera infancia, Modalidades de educación inicial, Centros de Desarrollo Infantil.* Retrieved 04 17, 2014, from Colombia Aprende: http://www.colombiaaprende.edu.co/html/familia/1597/articl es-305302_recurso_Calidad.pdf

Mineducacion. (2013, noviembre 26). *25 entidades aúnan esfuerzos en la Aliana Primera Infancia.* Retrieved 04 17, 2014, from Educación Inicial, portal Colombia Aprende: http://www.colombiaaprende.edu.co/html/familia/1597/w3-article-325033.html

Schön, D. (1998). *La formación de profesionales reflexivos.* Madrid: Paidos.

UNICEF. (s.f.). *Educación inicial.* Retrieved 04 17, 2014, from UNICEF - Únete por la niñez: http://www.unicef.com.co/situacion-de-la-infancia/educacion-inicial