A system of consultation and geographic location of schools (Copy)

Name:

SYSTEM OF CONSULTATION AND GEOGRAPHIC LOCATION OF SCHOOLS.

Description:

Currently, the country has approximately 29 different sources of information on education as administrative records, surveys that include educational aspects and census of schools. This mean that the country has an important quantity of sources of educational information which aim is the distribution of government financial resources or monitoring to educational policies.

This important quantity of sources constitute opportunities and challenges. The information produced in the country on education is used? Who uses it and who needs it? How is it used? Is the information useful for decision making at all levels of government? Is the information useful for end users of education, as the parents? How can you improve accessibility to information and promote, at the same time, new production of statistical information that be able to respond of needs of different users?

However the advances, is insufficient the information about educational aspects that are required for improve the design of educational policies as information about the teacher attendance, scholar bullying, teaching practices or scholar infrastructure, between other important aspects. The country neither has a tool that integrates the information available of the educational sector, therefore the sources available are not converging for respond to needs for integrated information. From parent, citizens and local authorities' point of view, the information is insufficient for their need, and there is not tools for listen or understand their needs in this regard.

In Colombia, education is a decentralized sector and the regulatory framework for the sector has defined instances autonomous for administration and execution of education, called certified territorial entities in education (departments and municipalities). Likewise, education happens in schools, where are the educational community (parents or guardians, teachers, principals and students), so the schools is the geographical area in which the efforts of local authorities are materialized, in schools are achieved the goals in coverage, educational quality and efficiency.

Therefore, is required a better respond to the information needs of local governments, schools and parents. These needs could be summarized as the availability of timely, relevant and quality information, with the sources as integrated as possible, and having friendly but powerful tools that allow getting insights from the data. This tools must do easily evident territorial differences by areas, regions, gender and vulnerable populations; social and economic inequalities in the country (differences in income and social and cultural capital among families), and social contexts of poverty and marginalization.

It is important to stress that improving educational information in the way described above do not implies generate new sources of centralized information. It is possible improve this information through the integration of the information available, the implementation of improvements in the accessibility, the generation of added value by geographic view and interaction that can promote the production of information from users (local authorities, parents, principals) , according to the needs they identify.

This is consistent with the DANE objective to foster in Colombia some tendencies relating the use of statistical information: 1. the integration of geospatial and geo statistical information; 2. the progress toward spatially literate societies; 3. a deeper use of administrative registers for statistical aims; 4. the opening in the availability of data to improve decision-making in government and society; and, especially, with the perspective of DANE for 2018: In 2018 DANE will consolidate as a modern, innovative and knowledge-generating institution and will continue to be the leading entity in statistical production.

Expected Benefits:

Sicole's aim is to quickly and reliably provide detailed, integrated information, from various sources, on education, as well as collect new information about education from the user though a user-centric, interactive, geographic visualization application available to parents, local decision makers and citizens alike.

Through SICOLE, DANE may collect information in the near future, for statistical research responsible for collecting information on the education sector in the country and can be used for other implementations of new applications for other statistical surveys that collect information, such as citizen security, among others. This can also help to implement methods of collecting more timely information through smartphones or web applications, which will strengthen data collection in some fields, which will support the generation of statistics.

Other Benefits could be summarized as the availability of timely, relevant and quality information, with the sources as integrated as possible, and having friendly but powerful tools that allow getting insights from the data. This tools must do easily evident territorial differences by areas, regions, gender and vulnerable populations; social and economic inequalities in the country (differences in income and social and cultural capital among families), and social contexts of poverty and marginalization.

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Data characteristics:

Sistema Integrado de Matrícula - SIMAT

One of the sources for the integration project is the administrative record of education in Colombia, or integrated system of enrolment called in Spanish Sistema Integrado de Matrícula - SIMAT. Following find the characteristics of this administrative record:

Kind of source	Administrative records.
Periodicity	Anual.
First data record	2.008
Quantity of registers	10.000.000
Quantity of variables	51
Observation unit	Student.
Coverage	National and subnational (municipalities).
Desegregation maxime	Sector (official and private), geographic zone (urban - rural), municipalities, schools.
General characteristics	With this administrative record is possible to follow the trajectory of student during all education process. In general terms, is possible, for example: identify if a student that have left one school is in other school, in the same or another municipality or if is a dropout; to calculate the coverage for municipality; to calculate repetition, between others. The date for official sector is in a different data base than the information for private sector.

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Kind of source	Administrative record
Periodicity	Anual
First data record	2000
Quantity of registers	For the year 2013, the number of records was: 374.686
Quantity of variables	55
Observation unit	Student
Coverage	National
Desegregation maxime	Student, also: sector (official and private), geographic zone (urban - rural), municipalities, schools,
General characteristics	This database corresponds to the standardized test that evaluates educational attainment as a requisite for the entrance to the superior education, so the students take it in 11 grade. The data base contains anonymized registers for student, the columns have information: 1. of academic type: scores by theme and global score; 2. about the headquarter as sector and zone, also the DANE code that allows the join with other sourcers; 3. Characerization of student as age, place of birth and place of living; 4. socioeconomic information associated to educational attainment, as education of parents, household revenues, etc.

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Kind of source	Census
Periodicity	Anual.
First data record	2005
Quantity of registers	This investigation had 57 data tables in 2013 , so the number of registers varies according to the table . However, the main tables are the directories , the number of registers for these are : for headquarters -laboral days: 69954 ; for headquarters: 57327 ; and for institutions : 25146 .
Quantity of variables	51

Observation unit	headquarters-laboral days, headquarters, and institutions.
Coverage	National
Desegregation maxime	Sector (official and private), geographic zone (urban - rural), municipalities, schools.
General characteristics	For the students, this source collects information on age, grade, internal efficiency, etnich groups, disabilities and excepcional capabilities; For teachers gathers information about scale level, grades in which dictates clases and maximum educative level reached; for the headquarters provides general characterization information, the levels and services offered, the teaching method, time intensity by subject, and fees. Additionally, there are information about revenues and connectivity.

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Kind of source	Administrative records.
Periodicity	Anual.
First data record	2.012
Quantity of registers	by 2013 this source contains 30,415 records for institutions and 60,582 records for headquarters
Quantity of variables	29
Observation unit	headquarters, and institutions
Coverage	National
Desegregation maxime	Student, Sector (official and private), geographic zone (urban - rural), municipalities, schools.
General characteristics	In this information system from headquarters that offer the service of preschool, primary and secondary education in the country, both the official sector and unofficial, the basic data of the headquarters and reports the news are recorded each, finding all changes since the start of the headquarters, that is, from its creation until the final closure.

OTHER SOURCES

The data produced of new information collecting through the app, would be integrated in this integration system.

Activities:

For developing the project we work in three main aspects:

a)   Smart Data or integration of sources

As expressed before, currently, Colombia has approximately 29 different sources of information on education. It is our goal to integrate several of these sources. Last year we worked in review of different sources and we achieve advances in a data profiling of quality. Before of the next three months we hope build the integration model and provide the integrated data in a geographic query tool. We want to integrate at least two administrative records of educational sector, a census of education and a directory of sources. In addition, we hope that the integration model allows integrating new layers of information, product of new forms of data collection.

b)   Interaction

We want collect new information through this app. Some kind of information is not always available in all parts of the country due to high costs or sensitivity of the issues, as the teacher attendance, scholar bullying, teaching practices or scholar infrastructure, between other important aspects for the development of educational policies. Currently we work in the planning of the pilot of collect information in attendance school and scholar bullying.

Another novelty of the integration, is that the application will allow a direct interaction between parents and the school to improve the quality of educational services. So, the parents will not only have official statistics to select the best school for their children, but they will be able

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c)   **Novelty dissemination, accessibility and visualization**

SICOLE will provide information about education using an app for web or mobile devices for all types of users. This app is conceived as a kind of Geographic Information System with additional visualization characteristics. The aim is that it will be easy to use, and it will provide -when so desired by the user- a user-centric navigation with the help of localization tools available on mobile devices.

We want to provide parents or guardians with a tool that allows them to locate schools geographically in their area in real time. The app will also allow to realize actions like view optimal routes and estimate travel time from two points -for example a house and certain school-, as well as provide basic statistical information about the school such as dropout rates, test scores of achievement, state of infrastructure, among other important pieces of information.

Issues and Risks:

Lack of methodologies of integration for this kind of project, having in mind the integration of surveys and administrative records, for example.
Limited success in getting information from other entities.
Limited success in user proposed: parent, citizens and local authorities.

Outputs

To be effective in the opening of the data it is not sufficient provide the microdata to the users , also it is neccesary develop visualization mechanisms so the users non experts can get better insights of their interest area. Maybe the most powerful mechanism of visualization are the maps, because the spatial thinking is deeply rooted in the human mind , and Because people can Easily link Their Own Experience with the spatial representation provided in the maps. Considering This, SICOLE has statistical maps, so the user can see easily spatial patters of phenomena like scholar desertion, results of standarized tests of quality, Among Others .