ACCESS AND INCLUSION IN PUBLIC EDUCATION: THE DILEMMA OF FAMILIES IN THE DOMINICAN REPUBLIC
ACCESO E INCLUSIÓN EN LA EDUCACIÓN PÚBLICA: EL DILEMA DE LAS FAMILIAS EN REPÚBLICA DOMINICANA

Freddy Jose Guzman[1]
International Iberoamerican University, Dominican Republic
(prosecomsa@gmail.com) (https://orcid.org/0000-0002-2735-3223)
Bárbara Yadira Mellado Pérez
International Iberoamerican University, Mexico
(yadiramellado@gmail.com) (https://orcid.org/0000-0001-8118-390X)

	ABSTRACT
	Admission and access to compulsory Dominican public schooling is an issue that, for years, has represented a challenge for the educational system and the rulers. With this challenge, the general objective of the research is to contribute through SISNAE as software guaranteeing reliability and quality of said process in public educational centers. As specific objectives, it is proposed to know the characteristics of the qualification criteria for admission; identify the mechanisms, strategies and techniques applied in the access and admission process by public educational centers for compulsory schooling; analyze the strengths and weaknesses of the Dominican educational system reflected in admission to compulsory schooling; and contribute, through the proposal of an automated computer tool, to reduce the risks of arbitrariness in these processes. A computer tool is suggested to optimize the admission process to compulsory Dominican public schooling, guaranteeing a positive impact on society, due to the benefits in favor of educational equity and inclusion. Supported by the methods: hypothetical-deductive, historical-logical, through empirical systematization, through observations, interviews, questionnaires and document analysis. Results are obtained that offer a more efficient, effective service with the levels of effectiveness necessary to guarantee more equitable access to public schooling. Finally, the contribution consists of proposing software for the automation of the access and admission process to compulsory schooling in public centers, contributing to the debate on access to compulsory schooling, and its impact on economically deprived families.

[1] Corresponding author.

	RESUMEN
Palabras clave: educación y tecnología, inclusión educativa, acceso escolar, proceso de admisión escolar, automatización, software.	La admisión y acceso a la escolarización obligatoria pública dominicana es un tema que, por años ha representado un reto para el sistema educativo y los gobernantes. Con ese desafío, el objetivo general de la investigación, contribuir mediante el SISNAE como software garantizando confiabilidad y calidad de dicho proceso en los centros educativos públicos. Como objetivos específicos se plantea conocer las características de los criterios de calificación para la admisión; identificar los mecanismos, estrategias y técnicas aplicadas en el proceso de acceso y admisión por los centros educativos públicos de la escolaridad obligatoria; analizar las fortalezas y debilidades del sistema educativo dominicano reflejadas en la admisión a la escolarización obligatoria; y contribuir, mediante la propuesta de una herramienta informática automatizada, a disminuir los riesgos de arbitrariedad en estos procesos. Se sugiere una herramienta informática para optimizar el proceso de admisión a la escolarización obligatoria pública dominicana, garantizando un impacto positivo en la sociedad, por los beneficios a favor de la equidad e inclusión educativa. Sustentado con los métodos: hipotético-deductivo, histórico-lógico, mediante sistematización con carácter empírico, mediante observaciones, entrevista, cuestionario y análisis de documentos. Se obtienen resultados que ofrecen un servicio más eficiente, eficaz y con los niveles de efectividad necesarios para garantizar el acceso a la escolaridad pública más equitativo. Finalmente, el aporte consiste en proponer un software para la automatización del proceso de acceso y admisión a la escolarización obligatoria en los centros públicos, contribuyendo al debate sobre el acceso a la escolaridad obligatoria, y su impacto en familias carentes económicamente.

Introduction

In Latin America, most countries face great challenges regarding the advancement of their educational systems and the Dominican Republic is no exception, since the need to respond to a situation that year after year is reflected as a challenge, where public sector centers offer insufficient classrooms in relation to the existing demand, and many families are forced to enroll their children in centers far away from their residences, or be forced to enroll in private schools or simply be left out of the classrooms.

This reality generated concern and motivation for the study, allowing for an in-depth study of admission and access to Dominican compulsory public schooling, which merits reflection on what has been proposed, in this context, by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Organization for Economic Cooperation and Development (OECD), as well as what is established in the Dominican Constitution and in the General Law of Education.

The literature review identified research and authors with concerns on the subject, who focus on studying and investigating the family and the school, focusing their analysis on: a) the discontinuities and continuities between the two (Cabrera, Funes and Brullet, 2004); b) the participation, collaboration and involvement of families in educational institutions (García, 2003; Gareau and Sawatzky, 2005; Crozier and Reay. 2005); c) the characteristics of each institution to perceive possible family-school relationship models (Pérez, 2004; Ravn, 2005, 2007); d) family and education or family and school (Musitu and Cava, 2001; Marti, 2008; Comellas, 2009; Feito, 2010).

In their article "El aprendizaje cooperativo: estudio de una metodología emergente inclusiva", Sanz and Quesada (2021) emphasize the need for inclusive education and the role of cooperative learning in achieving inclusion, highlighting the benefits of teamwork and the development of attitudes and values in students.

Seye and Diakhate (2019) in their research on the organization of the Senegalese education system, address the need for an inclusive and equitable system through various measures. First, the Senegalese government believes that education and training should be a vehicle for development at both the individual and collective levels. To achieve this, the aim is to create a school based on equity and equal opportunities, which can implement the country's development objectives.

In addition, options such as PACKET-EF 2013-2030, which focuses on correcting disparities, professionalizing higher education and training young people in high-demand sectors, have been implemented. This seeks to ensure that students acquire the necessary skills to adapt to scientific and technological advances, as well as to innovate.

In terms of inclusive education, the Senegalese education system has placed increasing emphasis on meeting the specific educational needs of children, as well as on the massive enrollment of girls in schools. These strategies are perceived as ways to provide a more equitable and democratic educational service.

According to these authors, the Senegalese education system addresses the need for an inclusive and equitable system through measures such as the creation of a school based on equity and equal opportunities, the correction of disparities, the professionalization of higher education, and the addressing of the specific educational needs of students.

The contributions of this research are acknowledged; however, in order to solve the problem posed, it is necessary to delve deeper into issues that are not addressed.

Based on the postulates of UNESCO, which promotes human rights and the rule of law in its spheres of competence, advocating for the promotion of these, by monitoring

258

their application, the Dominican Constitution establishes the right to education for all persons born in the national territory, as well as the General Law of Education 66'97, guaranteeing the right to education to all the inhabitants of the country, the need for this research arises, highlighting its importance, which consists of the presentation, in addition to the theories and concepts related to admission and inclusion in Dominican public education, of the dilemma that communities and families live with respect to this issue, as well as the contribution made by proposing the development of a computer tool, in order to automate access and admission to public schools in the country.

Research can be a frame of reference for the educational system, seeking opportunities and quality improvements, guaranteeing and increasing the level of access to the classroom, thereby promoting inclusive education.

The results obtained make it possible to offer a more efficient and effective service in accordance with the needs of the environment and, in this way, achieve the levels of effectiveness necessary to guarantee fair and regulated access to public schooling. The feasibility of the research is considered taking into account the existence of material and human resources, in addition to the time for its realization and the proposed objectives. The research is considered feasible, since the institutions have been receptive enough to open their doors and provide the required information.

The social relevance lies in the fact that it describes what is related to access to Dominican public compulsory schooling and proposes a computer tool to respond to it, generating a positive impact on society, since both public schools and families will be the first to benefit from these improvements.

Methodologically, it is useful because the data and information obtained are used to identify the aspects that respond to the objectives set. In terms of its scope, it opens new paths for students and professionals who present situations similar to those presented here, serving as a frame of reference.

The feelings of frustration that prevail in the poorest families are aggravating. They identify a hostile environment of poor and unjustified quality of education in public schools, as reported in interviews.

In the practical aspects, it can be seen how the interested parties (guardians) form long lines from early in the morning and throughout the day, in order to obtain an enrollment for their children, which they do not always achieve.

As a result of research on the functioning of the Dominican educational system in terms of access and educational inclusion in the public sector, few studies and research on the subject were identified, which makes explicit the lack of interest and absence of discussions aimed at resolving or addressing the dilemma faced by families when enrolling their children in these centers.

The lack of background and theoretical or practical research on the subject suggests the need to respond and assist in the process of access and educational inclusion in the public sector, making available to the system and families, a tool where they can request enrollment for their children automatically. This implies a study opportunity that represents, in turn, a significant and functional contribution to the Dominican educational system.

Taking into account these investigations and based on a series of aspects that have been worked on in depth, it is considered necessary and opportune to define criteria that allow the admission and access, without arbitrariness, of students to public sector schools, based on the experiences, conceptions and what is established in the Dominican Constitution and the Education Law 66'97.

Dominican Republic initiatives regarding access to education.

The Dominican Constitution establishes in its Article 63, the right to education that every person born in the national territory has (Dominican Constitution, 2015). The purpose and scope of Education Law 66'97 is to guarantee the right to education to all inhabitants of the country. This law also channels the participation of the different sectors in the national educational process (General Education Law, 1997).

An introspection of what is stated in the Law reveals the weakness of the system and the way in which the established principles and the rights of citizens, as stated by UNESCO and cited in the Dominican Constitution, are violated.

The goal of the Education Agenda 2030 (SDG 4) coincides with the objectives of the national agenda in the field of education, defined in the National Development Strategy (END), the Ten-Year Education Plan 2008-2018 and the National Pact for Education Reform. The goals of the 2016-2020 Educational Proposal presented by the Ministry of Education of the Dominican Republic (MINERD) have been aligned with the goals of the Sustainable Development Goals (SDG 4) and other local and international commitments in the area of education.

It is necessary to contextualize SDG 4 at the national level, which implies the creation of new data sources and modification or improvement of existing sources to adequately measure progress towards the expected results.

Sustainable Development Goal 4 has 10 targets that encompass many different aspects of education. There are 7 goals, namely, that are expected results and 3 goals that are the means to achieve them:

Table 1
Targets that respond to SDG No. 4

GOALS	EXPECTED RESULTS
Universal primary and secondary education.	By 2030, ensure that all children complete primary and secondary education, which should be free, equitable and of good quality and produce relevant and effective learning outcomes.
Early childhood development and universal preschool education.	By 2030, ensure that all children have access to quality early childhood care and development services and preschool education so that they are ready for primary school.
Equal access to technical/professional and higher education.	By 2030, ensure equal access for all to quality technical, vocational and higher education, including university education.
Adequate skills for a decent job.	By 2030, substantially increase the number of youth and adults who have the necessary skills, particularly technical and vocational, to access employment, decent work and entrepreneurship.
Gender equality and inclusion.	By 2030, eliminate gender disparities in education and ensure equal access for vulnerable people, including persons with disabilities, indigenous peoples and children in vulnerable situations, to all levels of education and vocational training.
Universal youth literacy.	By 2030, ensure that all youth, and at least a substantial proportion of adults, have literacy and numeracy skills.
Citizenship education for sustainable development.	By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including through education.

Plans and policies are being implemented in the following ways:

Effective learning environments: Build and adapt school facilities that are responsive to the needs of children and people with disabilities and gender-sensitive, and that provide safe, non-violent, inclusive and effective learning environments for all.

Scholarships: Substantially increase worldwide the number of scholarships available to developing countries to enable their students to enroll in higher education programs.

Teachers and educators: By 2030, substantially increase the supply of qualified teachers, especially in the least developed countries and small island developing states. Achieving SDG 4 requires increasing the fiscal effort in favor of education. Although since 2013 the country has doubled public spending on pre-university education (from around 2% of GDP to 4%), it is not sufficient to achieve the goals of the national education agenda. Annual budget allocations need to be increased to reach the levels of funding for public education set forth in the Ten-Year Education Plan (5.25% in 2017 and 5.60% in 2018) and in the END (6% in 2020 and 7% by 2030). The Fiscal Pact established in the END, aimed at improving the quality of spending and increasing tax revenues, would create the conditions to achieve and sustain such goals (INTERED, 2017).

The laws intended to regulate the Dominican educational system emanate from Art. 63 of the Constitution, which establishes the right to education and states: "Every person has the right to an integral, quality, permanent education, under equal conditions and opportunities, with no other limitations than those derived from his aptitudes, vocation and aspirations" (Dominican Constitution, 1844).

Numerous Ordinances are derived from it, which provide answers to the needs that arise in this system, depending on the circumstances. The report "Education for All 2000-2015: Achievements and Challenges", presented by MINERD and the Regional Office for Culture for Latin America and the Caribbean, Unesco-Havana (April 2015), states that as a result of the investment of 4% of GDP for education, the country made progress towards meeting the goals set at the World Education Forum, Dakar, 2000. (Germán, 2015).

Contribution of the automation of admission processes in education

In the educational field, the approaches used in terms of information systems are diverse; among them there are multiple advantages and in some cases, some disadvantages; however, only a few of the information management systems used have focused their efforts on optimizing the educational resources available, much less oriented to control admission processes in schools, since human resources management is more representative; however, in today's education, one of the great challenges is precisely to respond to the high demand of society with respect to the schooling of their children, which leads to a growth of needs that affect the quality of education.

Educational management information systems make it possible to measure what is valuable, to recognize the strengths and weaknesses of a school, to compare it with other schools, to identify common indicators that measure the same with a high degree of reliability, which can guide and channel the actions of the various participants, in order to propose alternative solutions (UNESCO, 2014).

Educational institutions base their organizational development on the proper management of information. In this management there are common factors, essential for the survival and progress of any entity, among which innovation, responsiveness, productivity and competence are identified. Information management seeks to ensure that the educational institution has the necessary information and capabilities for its continuous adaptation to internal and external changes in the situational context; the

implementation of quality management depends, to a large extent, on the correct management of information and knowledge (UNESCO, 2014).

Solid and reliable information systems contribute to the transformation and modernization of the education sector and represent a strategy within the efficiency policy outlined in the current educational reform.

Without an information system, it is tedious to execute actions or manage resources; organizations that are flexible, agile and more capable of learning, in a rapidly changing environment, present the best conditions for change. Without information management it is not possible to make reasonable decisions, just as it is not feasible to outline the policies, programs and design the methodological processes that the institution will follow (UNESCO, 2014)[2].

The implementation of information systems in school administration has generated a renewed interest in the analysis, management, interpretation and evaluation of the results obtained from it.

In short, information systems must consider the information resources, the people who process the information and the development of institutional intelligence, so that the results and data obtained provide the greatest possible objectivity to promote appropriate decision making.

Method

Design

The research is based on the positivist, interpretative and critical paradigms, since it is based on the testing of empirical hypotheses and can be generalized to other similar studies. In addition, variables are observed in their nature, in everyday life and not in a controlled environment. It also addresses a social issue, where political wills, ethical and cultural values, as well as economic issues interfere. According to (Guba and Lincoln, 1988), cited by (Godoy Rodríguez, 2019), a research paradigm comprises four elements, namely: epistemology, ontology, methodology and axiology.

The research is guided by the assumptions, beliefs, norms and values of the epistemological and methodological approaches. The first, because it focuses on the nature of human knowledge and the understanding that, as a researcher, one acquires of the subject in question, in order to broaden and deepen the understanding in the field of research. The second one is considered, since a well-planned research design, methods, approaches and procedures have been thought of to investigate the procedures applied in the admission of students to public educational centers of compulsory schooling.

In this sense, the participants (actors in the process), the instruments and the data analysis have been defined for data collection. The policy is analyzed to improve the admission processes to educational centers, generating a transformation in this process, so the researcher participates and interacts directly with the actors to experience firsthand, the lived reality.

The design is non-experimental, since the phenomena that affect preference were observed as they occur in their natural context, and then updated. Here the researcher is limited to the observation of existing situations, given the inability to influence the variables and their effects.

---

[2] UNESCO. (2014). Education Management Information System (EMIS). s.r.

Participants

The sample was selected randomly, since the population is known. Applying the formula of (Fischer & Navarro, 2002), starting from a population of 338 students, results in 180 applicants, knowing that the level of reliability is 1.96 and a margin of error of 5%, with a probability of success and failure of 50% each. In the case of teachers, 120 were applied, taking into consideration that the population is 174. Two members of the Management Team of each center. In the case of parents, the population of 101 was considered, resulting in a sample of 80 parents, because it happens that the same family may have an average of three children in the same center. With respect to the authorities, the survey was applied to a representation of two district and two regional technicians, for a total of 390 people (Table 2).

Table 2
Population and sample

Population					Sample					
Centers	Manage ment Team	Students	Teachers	Families	Centers	Manage ment Team	Students	Teachers	Families	Regional-District Authorities
17	17	952	493	286	**17**	**6**	**180**	**120**	**80**	**4**

The criteria for inclusion of the participants are based on the fact that they meet the characteristics that necessarily have to do with the admission processes for compulsory schooling in public schools. In the case of students (applicants), they are the main focus of the research; parents (families) are the guardians of these students.

Instruments

Different instruments were structured in order to collect real data using the objects of study as a source, focusing on the main actors of the educational communities. The questionnaires have dimensions, questions and alternatives, structured using the unipolar Likert scale, to evaluate the opinions and attitudes of the respondents. An observation guide was also designed and applied to the enrollment process of the centers, which includes the dimensions and qualitative evaluation criteria ranging from always, sometimes or never, with this guide first-hand information was obtained, as the process developed in each center.

Data analysis

Initially, the situation was identified and, based on the observations, the topic was defined. Subsequently, it was delimited and thus the title of the research was obtained. Based on the variables it encompasses, the problem, its justification and the objectives were defined.

Through bibliographic research, the existing literature on the subject was reviewed, starting from the general to the particular, outlining with a holistic view of the world, Latin American, Caribbean and the reality of the country. Subsequently, the methodology was defined, highlighting the design, identifying the universe, the population and the selected sample. The variables to be studied were identified and delimited, and the research instruments were defined and structured according to the object or subject of study.

Gradually, the surveys were applied to the different stakeholders and observations were made of the processes in the educational centers. The procedures for data collection

were implemented in several stages: a letter was sent to the management of each Educational Center requesting their authorization to access and survey their situation with respect to the access and admission process and the criteria taken into consideration to select their students. This survey and a preliminary investigation were carried out using closed and open questions in order to obtain initial information.

Thereafter, visits were scheduled to the Management Teams, which were observed at different times, upon formal notice, focusing basically on their role in the school admission process. At the same time, teachers were approached with a primary focus on determining the center's effectiveness and compliance in admitting students.

The survey to the parents was made in two visits, during the development of the different activities related to the admission of their children. In the case of the students, they were also surveyed on three occasions, without prior notice, so as not to alter the results of the research. Technicians were surveyed using Google Form.

Several bibliographic sources were consulted, as well as monographs and doctoral theses on topics related to the research, in order to use them as a frame of reference and analyze the conclusions reached by their authors. For data processing, the results were organized and ordered, from which each of the responses were tabulated, taking the results to diagrams or statistical graphs and complementing them with a general commentary, for which SPSS Stadistic software was used for tabulation and generation of figures (graphs) according to variables. This led to the definition of school admission criteria, which laid the foundations for defining the rules and procedures to carry out this process, allowing for the structure and operation of the proposal. After applying this procedure and sequence of events in the research process, the conditions were created to arrive at the final conclusions and implications.

Importance of the National School Admission System (SISNAE)

We have also worked to automate the teacher selection process in the Dominican Republic, following certain requirements and criteria that must be met, starting with the online filling out of a form. In the same way, a Web platform could be implemented, where each family fills out an online form.

This form would be linked to the Educational Centers Management System (SGCE) and to the School Management Information System of the Dominican Republic (SIGERD), from which each center will make a daily survey, while it is in this process and will determine its capacity and admit those applicants who meet the highest number of criteria and with the highest score according to their classroom capacity, in this way this database could be connected to the Power Bi of MINERD in order to generate reports and statistical graphs by educational indicators.

This process must be carried out at least three months before the beginning of each school year, i.e. the form must be filled out by the parents during the month of May, which will allow sufficient time for the centers to qualify and select their students and communicate the response to each parent.

Through this procedure, there will be greater control from the highest educational authorities of the reality of each center under their supervision, which, in turn, streamlines the process and national educational statistics. At the same time, it would address the issue of school inclusion, where parents or guardians are the ones who decide where their children will study and, finally, it fights arbitrariness in the selection of applicants for admission to each center.

System operation

To make the process feasible, an informative Web site will be available to explain the operation and methodology applied. This site will have an access button to register as an applicant, which must be completed by the applicant's proxy. In addition, you will be able to see, as you select the center(s) of your choice, the critical route to get there, using Google Map, which allows, in turn, to measure the time it would take the applicant to travel to and from the center. You will also be able to consult the academic offerings, infrastructure, the Center's Educational Project (PEC), and its achievements in terms of plans, programs and projects.

To understand the system, the application is divided into three stages:

First stage: The MINERD provides families with a platform where they can apply and which contains information on each establishment, such as: the PEC, which contains relevant information on each center.

When filling out the application form, the proxy may select three (3) educational establishments in order of priority, so that if he/she is rejected for any reason in the first one, he/she will automatically queue up to the second option and so on, a procedure that will be notified by SMS to his/her cell phone.

Second stage: If the school has available places, the system ensures that all applicants (meeting the priority criteria) are admitted. However, in the event that there are more applicants than places, the schools must randomly assign the vacancies to other schools that the parent has pre-selected as second or third choice. The order is made by means of an algorithm that takes as a reference the applicant's score based on the mandatory criteria, which ensures its randomness. The following priority criteria must be met when assigning your quotas:

1. Siblings in the establishment (graduates and/or active).
2. Vulnerable applicants (with motor disabilities, low family income, and others).
3. Children of employees of the facility.
4. Alumni who have not been expelled.
5. Proximity to your home or your proxy's work.
6. All other applicants.

In detail, the variables to be considered are shown in Table 3:

Table 3
School admission variables and criteria

Variable	Criteria	Rating (%)	
		Yes	No
a) Family ties	Siblings in establishment (active or graduated).	15	0
b) Vulnerability	Applicants who are economically vulnerable or have a disability.	20	0
c) Relationship with officials.	Children of employees of the facility.	15	0
d) Reintegration	Alumni who have not been expelled.	10	0
e) Geographic location of your home	Proximity to your home or to your proxy's place of work	20	0
f) General public (Number of criteria)	Meets all 5 of the above criteria	20	0
	Weighting	**100%**	
General public (Number of criteria)	Meets three of the above criteria	15	
	Weighting	**95%**	
General public (Number of criteria)	Meets two of the above criteria	5	
	Weighting	**85%**	
Does not meet any criteria		50%	
	Weighting	**50%**	

a) Existence of siblings enrolled in the center or legal guardians working at the center. In the event that several siblings apply for a school place in the same school and for the same or different grades, the admission of one of them will imply the admission of the others.

b) Concurrence of disability in the applicant, in his/her legal guardians, or in any of his/her siblings or foster children in the same family unit.

c) Existence of legal guardians who work permanently at the center.

d) The student has dropped out or deserted and wishes to return to the center, as long as he/she has not been expelled (former student).

e) Proximity to the proxy's family residence or place of work.

e.1) When the domicile is located in the area of influence or bordering the center.

e.2) When the proxy's place of work is located in the area of influence or bordering the center.

f) General public: The student who belongs to a large or single-parent family and is a minor or adult subject to extended parental authority or guardianship.

g) Any applicant who meets only some or none of the above criteria.

An applicant who meets all the criteria (5) would automatically receive 100% of the evaluation, which guarantees access to the establishment, provided there is space; while if he/she meets three (3) of the five, he/she would be at 95%, decreasing the possibility, and if he/she only meets two (2) of them, his/her evaluation is 85%, which indicates that his/her possibilities of access are reduced, but this does not mean that he/she will be rejected, but that the algorithm would place him/her at the bottom of the selection order. If the applicant does not meet any of the admission criteria, he/she will accumulate a 50% weighting, which reduces the possibility of being admitted, but, as long as there is space, access will be authorized and admission will proceed (table 3).

Third stage: The MINERD ensures that the quotas that are filled are in accordance with the preferences of parents and access priorities.

Parents have the option to accept or reject the facility where they were admitted. In case they reject their place, it is opened for another student on the list. Along with accepting or declining, they can indicate whether they want the waiting list to run.

Table 4
Applicants and non-applicants through SISNAE

MUST APPLY	SHOULD NOT APPLY
First-time entrants to a public educational institution	Those who wish to enter a private school.
Those who want to change centers.	Those who wish to continue in their center under the same modality.
Those who are in a center that does not have continuity in the next grade.	Those who want to enter day care centers or nursery schools.
Those interested in re-entering the public education sector.	Those who want to enter a special education center.
Those who wish to change modality.	Those interested in entering the youth and adult subsystem (PJA) or the PREPARA program.
Those who want to change centers due to the type of workday.	

Proxies: Proxies are those who comply with the following aspects:
1. First, the applicant's mother, father or legal guardian [3].
2. Secondly, grandparents (maternal and/or paternal).
3. Third, a simple tutor[4].

---

[3] They have the highest priority, in the event of a legal ruling.

[4] In order to be validated, you will have to go through a procedure at MINERD.

Figure 1
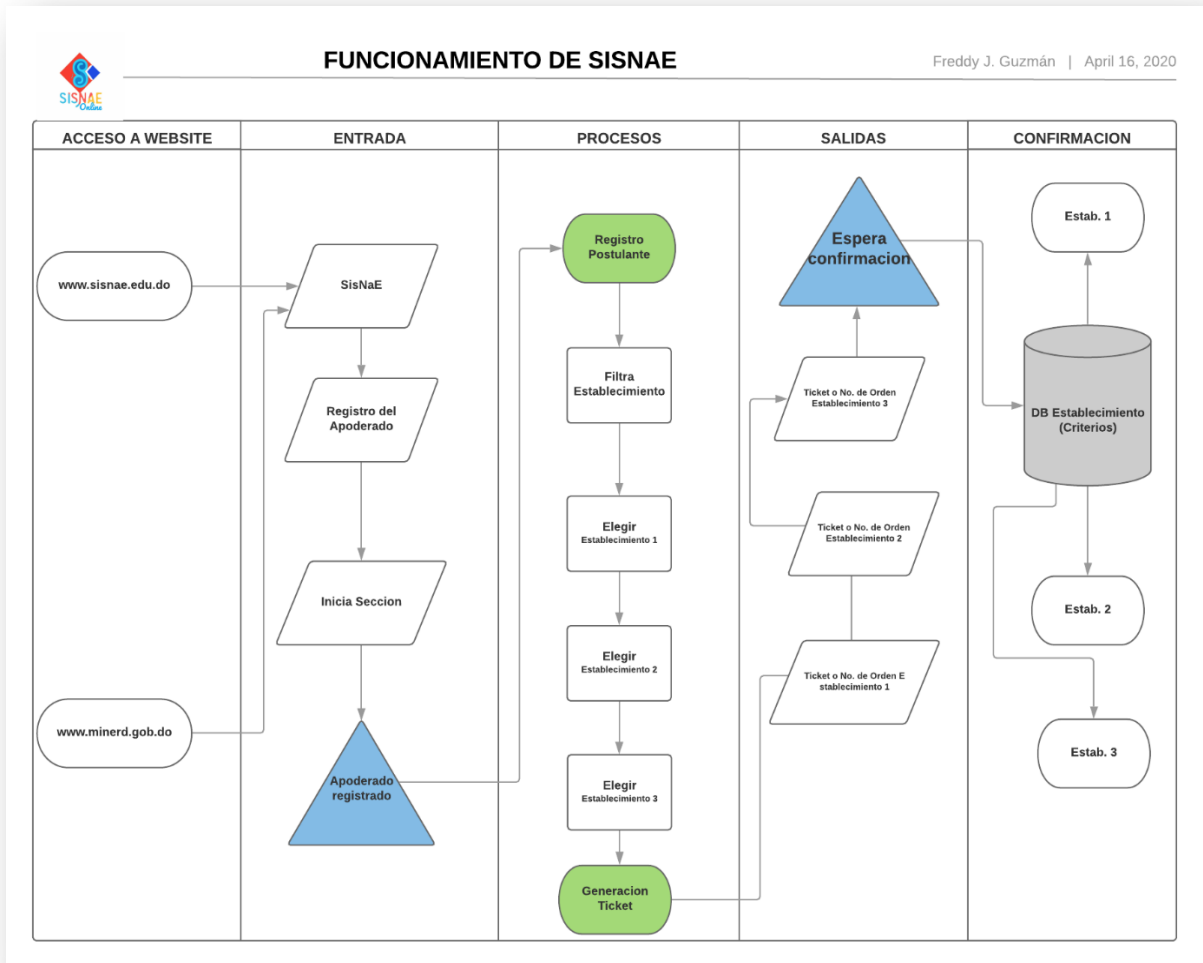*Flowchart with the sequence of events or path of SISNAE*
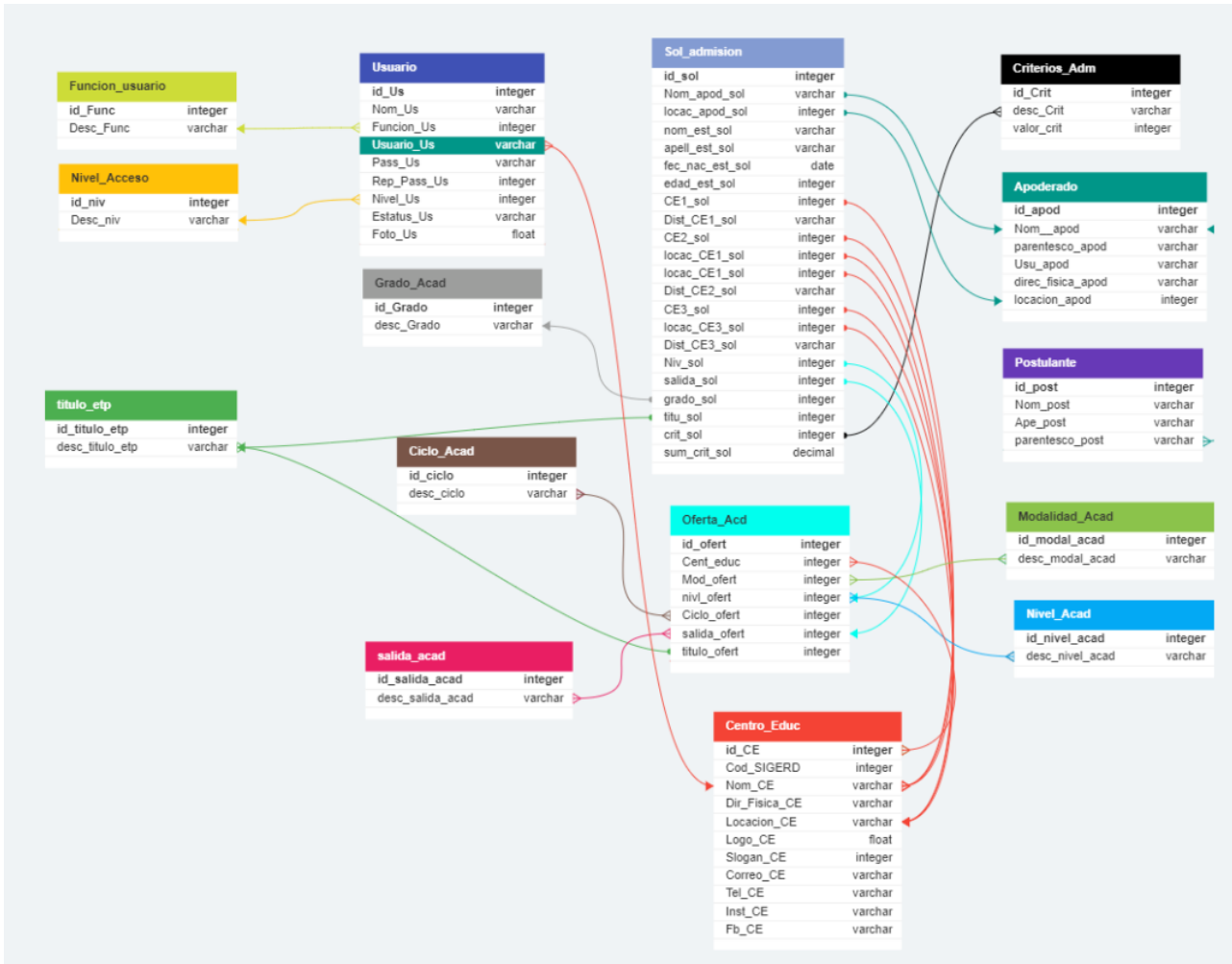
Figure 2
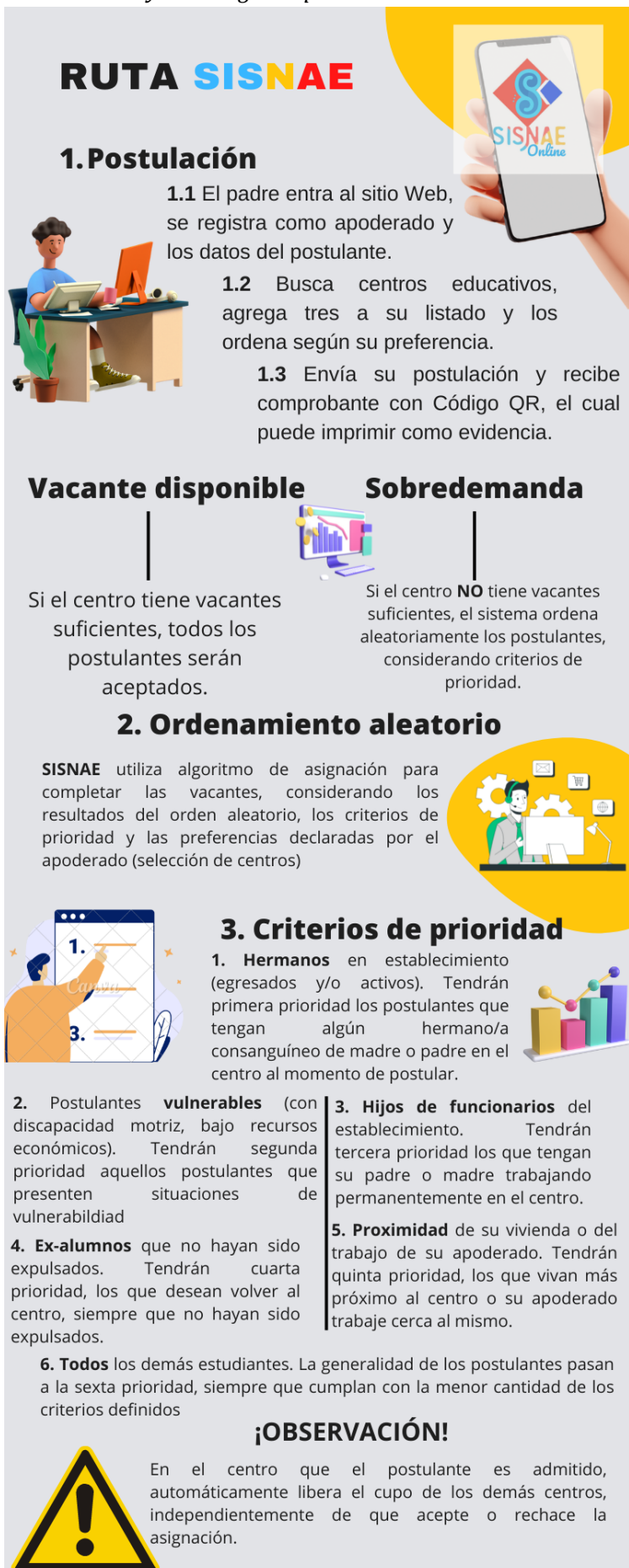*Entity-Relationship Diagram*

Figure 3
System Logic Sequence

RUTA SISNAE

1. Postulación

1.1 El padre entra al sitio Web, se registra como apoderado y los datos del postulante.

1.2 Busca centros educativos, agrega tres a su listado y los ordena según su preferencia.

1.3 Envía su postulación y recibe comprobante con Código QR, el cual puede imprimir como evidencia.

Vacante disponible

Si el centro tiene vacantes suficientes, todos los postulantes serán aceptados.

Sobredemanda

Si el centro **NO** tiene vacantes suficientes, el sistema ordena aleatoriamente los postulantes, considerando criterios de prioridad.

2. Ordenamiento aleatorio

SISNAE utiliza algoritmo de asignación para completar las vacantes, considerando los resultados del orden aleatorio, los criterios de prioridad y las preferencias declaradas por el apoderado (selección de centros)

3. Criterios de prioridad

1. Hermanos en establecimiento (egresados y/o activos). Tendrán primera prioridad los postulantes que tengan algún hermano/a consanguíneo de madre o padre en el centro al momento de postular.

2. Postulantes **vulnerables** (con discapacidad motriz, bajo recursos económicos). Tendrán segunda prioridad aquellos postulantes que presenten situaciones de vulnerabildiad

3. Hijos de funcionarios del establecimiento. Tendrán tercera prioridad los que tengan su padre o madre trabajando permanentemente en el centro.

4. Ex-alumnos que no hayan sido expulsados. Tendrán cuarta prioridad, los que desean volver al centro, siempre que no hayan sido expulsados.

5. Proximidad de su vivienda o del trabajo de su apoderado. Tendrán quinta prioridad, los que vivan más próximo al centro o su apoderado trabaje cerca al mismo.

6. Todos los demás estudiantes. La generalidad de los postulantes pasan a la sexta prioridad, siempre que cumplan con la menor cantidad de los criterios definidos

¡OBSERVACIÓN!

En el centro que el postulante es admitido, automáticamente libera el cupo de los demás centros, independientemente de que acepte o rechace la asignación.

4. ACEPTAR O RECHAZAR

4.1 ACEPTAR

Puede aceptar el resultado, o también aceptar activando las listas de espera

4.2 RECHAZAR

Si rechaza o no participó en el período principal, pasa al período..

4.3 ACEPTAR Y ACTIVAR LISTA DE ESPERA

4.4 COMPLEMENTARIO

Podrá postular a establecimientos que aún cuentan con vacantes disponibles.

4.5 RESULTADOS LISTA DE ESPERA

4.6 RESULTADOS PERÍODO COMPLEMENTARIO

5. MATRÍCULA

Este proceso de matriculación se desarrolla de manera presencial en el centro educativo donde fue admitido el postulante. En caso de que no sea matriculado en el período correspondiente, automaticamente liberará su cupo.

2

Figure 4
SISNAE Web home page.

Figure 5
SISNAE Web site menu

Figure 6
TARE, SISNAE program information

Figure 7
Information about applicants and non-applicants, SISNAE

Figure 8
SISNAE: Dashboard

Figure 9
SISNAE: Maintenance of educational institutions

Results

According to the results, 43% of the management teams and 38% of the students, as well as 53% of the technicians somewhat agree with the procedure applied in public schools in their admission process; however, teachers (57%) and 46% of the parents strongly agree.

Regarding the accompaniment of regional and district authorities, 43% of the management teams and 59% of the technical staff say that the technical staff almost always accompanies these processes. However, 44% of students, 70% of teachers and 43% of parents say they never do.

71% of the management teams, 46% of the students and 85% of the teachers agree with 70% of the parents, where they strongly agree that the educational centers comply with the provisions of the constitution regarding the right to education; contrary to 65% of the technicians who somewhat agree.

Of the management teams, 43% and 35% of the students somewhat agree that the admission processes are carried out with a certain degree of arbitrariness. Of the teachers, 41% disagreed somewhat; 28% of the parents strongly disagreed, while 59% of the technicians neither agreed nor disagreed.

In reference to the existence of criteria, 100% of the management teams, 76% of the students, 80% of the teachers and 70% of the parents/guardians consider that criteria are required of applicants for admission. On the other hand, all the actors agree that the way of developing the admission processes in the centers is carried out manually, with 57% of the management teams, 55% of the students, 52% of the teachers, 63% of the parents and 77% of the technicians agreeing with this criterion.

57% of the management teams and 41% of the technicians state that there is no technological tool in the public education system to automate the admission process. However, 46% of students, 48% of teachers and 42% of parents believe that such a tool does exist. It should be noted that most teachers do not get involved in these processes, nor do the students, as they are usually enrolled by their parents or guardians.

Discussion and Conclusions

Regarding the systematization of definitions and concepts related to the automation of school processes, it is proposed that in the educational sector it is an ally for the simplification and optimization of workflows and operational processes, generating direct benefits for the administrative and pedagogical areas.

As stated by UNESCO in 2014, educational institutions support their organizational development in the proper management of information, in which there are common factors, essential for the survival and progress of any entity, among which innovation, responsiveness, productivity and competence are identified.

That said, there is a clear need for a tool that automates the school admission selection process, where families are the ones who decide the center where their children will study.

In reference to the characteristics of the qualification criteria for student admission, it is concluded that half of these centers require applicants to meet criteria, but not all of them explain what they consist of. All stakeholders were of the opinion that criteria are required for applicants to be admitted.

Through the application of the observation guide, it was determined that, with respect to the procedure for admitting students, the centers sometimes apply admission tests. As a whole, arbitrariness is often observed on the part of the authorities in the selection of their students.

These results show that in the country there are no standardized criteria for admission, nor is there legislation, i.e., there is no legal reference where the criteria for selecting students in public schools are specified and defined.

It is imminent that criteria be defined to make the admission process transparent and reduce arbitrariness, where families participate as active entities in the process and are the ones who choose the centers for their children.

Regarding the identification of the mechanisms, strategies and techniques applied in the access and admission process, the management teams, students and technicians are somewhat in agreement with the procedure applied. However, teachers strongly agree.

It is obvious that, due to the manual execution of the admission process, there is no absolute control of the data or of the process itself, so the proposal of a computerized

274

system guarantees parents some certainty that their children will be admitted to the centers that, according to them, could be convenient for them or the one of their preference.

The strengths and weaknesses of the Dominican educational system as reflected in admission and access to schooling were analyzed. The following was considered: the accompaniment of the centers by regional and district authorities, of which the management and technical teams state that they almost always accompany these processes. However, students, teachers and guardians say that they never do; regarding compliance with the provisions of the law on the right to education, management teams, students, teachers and guardians strongly agree that the centers comply with the provisions of the constitution; contrary to the technicians who are somewhat in agreement.

The management teams and students are in some agreement that the admission processes in the schools are carried out arbitrarily. The teachers and proxies disagreed; the technicians were neutral in this regard.

It has been demonstrated that there are weaknesses in the system, violating the rights of citizens with respect to access and admission to public schools.

Law 66'97 on education establishes parameters and indications regarding school admission; the management and teaching teams said that it is always complied with; in contradiction with the students and families, assuring that it is never complied with, although the technicians are of the opinion that it is almost always complied with.

All of this represents a scourge in the public education system, since a student who is enrolled where he or she does not feel comfortable has a pretext for not focusing and demonstrating maximum academic achievement. It is important that families feel identified with the educational institution where their children study, thus guaranteeing the integration and support needed in the school-family relationship.

The objective was to propose software to reduce the risks of arbitrariness in admission and access to public schools as a result, the members of the management and technical teams stated that there is no technological tool to automate it. In this sense, the "Sistema Nacional de Admisión Escolar (SISNAE)" (National School Admission System) is proposed, an online platform where parents can apply to public schools and also receive information about the process.

After the SISNAE was created, several tests were carried out to determine its behavior and possible application. In such tests, the proxies completed a registration form and then made the application. The educational center is notified and, based on the applicant's accumulated criteria score and taking into consideration the availability of places for the grade requested, accepts or rejects the application. Subsequently, the proxy is notified by the center. The software performed effectively, so it is concluded that it applies its functionality and effectiveness to automate the admission processes in the country's public schools.

If this software is applied, the weaknesses of the system will be addressed, significantly improving the attention to diversity and inclusive education in the country, minimizing the iniquity and arbitrariness reflected in this process.

In response to this approach, SISNAE would revolutionize Dominican education, guaranteeing access to all applicants in a center selected or preferred by their guardians, thereby increasing the coverage rate and responding to the high demand for places in the public sector. It also addresses school dropout rates, promoting educational inclusion, which is the same as preventing students from dropping out of school, and with this the country is on its way to achieving SDG No. 4 and the provisions of Article 26 of the UN

Universal Declaration of Human Rights (UDHR), in compliance with Article 63 of the Dominican Constitution and Law 66'97 on education, regarding the right to education.

Limitations

Not all of the selected centers accepted the invitation and it was necessary to identify another center to carry out the study. There is little evidence of initiatives by legislative bodies to implement public policies regarding access to compulsory schooling. On the other hand, no sources were found in the country where the subject was studied. The budget also suffered alterations, since the consultants' responses were very late and an extension had to be requested regarding the deadline for delivery of the final product.

References

Cabrera, D. Funes, J. y Bullet. C. (2004). *Alumnado, familias y sistema educativo*. Octaedro.

Comellas, Mª. J. (2009). *Familia y Escuela: compartir la educación*. Graó.

Crozier, G. & Ready, D. (Ed.). (2005). *Activating participation: parents and teachers working towards partnership.* Trentham Book Limited.

Estrategia Nacional de Desarrollo. (2015). *Artículo 23, líneas de acción 2.1.1.1 a 2.1.2.3*.

García, F. (2003). *Familia y escuela.* Editorial CCS-ICCE.

García, I. (2019) Automatización de Procesos: Qué es y por qué deberías pensar en hacerlo. https://trends.inycom.es/automatizacion-de-procesos-que-es-y-por-que-deberias-pensar-en-hacerlo/.

Feito, R. (2010). Familia y escuela. Las razones de un desencuentro. *Educación y Futuro, 22*, 87-107.

Germán, A. (2015). El sistema educativo dominicano muestra avances significativos. [Versión electrónica]. *Periódico de economía y finanzas elDinero*.

InteRed (2017). El ODS 4 en República Dominicana: Articulación con la agenda educativa nacional. Boletín No. 17. https://www.intered.org/sites/default/files/boletin_17_fse_ods4.pdf.

Ministerio de Educación y Formación Profesional. (2019). Panorama de la educación. Indicadores de la OCDE 2019. Informe español. Madrid. www.publicacionesoficiales.boe.es/.

Musitu, G. y Herrero, J. (1994). La familia: formas y funciones. In Musitu, G. Allatt, P. *Psicosociología de la familia*. Albatros Educación.

Noticias ONU. (2018.). Artículo 26: Derecho a la educación. https://news.un.org/es/story/2018/12/1447521.

Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (UNESCO), (s.f.). https://www.un.org/ruleoflaw/es/un-and-the-rule-of-law/united-nations-educational-scientific-and-cultural-organization/

Pérez, R. Mª. (2004). *Les relacions entre familia i esola.* In *6ª. Jornada del Maresme*, Mataró.

Ravn, B. (2003.). Cultural and Political Divergences in Approaches to Cooperation between Home, School and Local Society in Europe. In Castelli, S. Mendel, M & Ravn, B. (eds.). (2003). *School, Family, and Community Partnership in a World of Differences and Changes*. Uniwerssytetu Gdanskiego.

Sanz Peinado, R., & Quesada Zaragoza, N. (2022). El aprendizaje cooperativo: estudio de una metodología emergente inclusiva. *MLS Inclusion and Society Journal, 1*(1), 132-147. https://www.mlsjournals.com/MLS-Inclusion-Society/article/view/965

Senado de La República. (1997). Ley General de Educación 66'97.

Seye Djité, S., & Diakhate, M. (2019). Organización del sistema educativo senegalés. *MLS Educational Research (MLSER), 3*(1), 79-92. https://doi.org/https://doi.org/10.29314/mlser.v3i1.86