


PROPOSAL FOR THE IMPROVEMENT OF THE PORTAL TRANSPARENCY OF THE EXECUTIVE GOVERNMENT OF SANTA CATARINA

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ABSTRACT

The purpose of this article is to provide guidelines for improving the data and public information transparency in the State of Santa Catarina, related to Education, through the Transparency Portal of the Executive Government. This is a descriptive and qualitative research, which uses an analysis model based on attributes of information quality. The population consisted of 61 information requests from 2019 based on the Access to Information Act (LAI). Using a documentary and content analysis, the specific results that 88% of the requests refer to Basic Education and 12% to Higher Education. Another classification showed that 58.8% are associated with "Provision of Services", 29.4% in "Institutional Information" and 11.8% in "Financial Management". Twenty-three content proposals were elaborated addressing aspects of relevance, reliability, language, presentation, timeliness and historical series, which are part of the dimensions usefulness, understandability and temporality of the analysis model. The proposals deal with organizational information, human resources, schools, the state university, as well as services, actions and results, expenses and the agreements and transfers of resources related to Education. They address general aspects, such as the general number of students, teachers and schools, but they also guide the availability in a particular way, such as content related to certain expenses of each school. The creation of the "Education" thematic page on the Portal to concentrate the content repertoire and facilitate access and directing to other pages and existing features on the Portal, applying education filters, consisted of a general improvement proposal.

Keywords: Public Transparency. Education. Information Quality. Accountability.

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1 INTRODUCTION

Public transparency has been considered a dimension of *accountability* capable of awakening more conditions of trust in the ruled before the rulers (Raupp & Pinho, 2013). It contributes to improving the relationship between government and population from access to information, creating conditions to face problems related to the loss of trust of government authorities, the fight against corruption and *the demands of accountability* (Pasquier & Villeneuve, 2007). Transparency is a set of mechanisms that allow access to public information (Angélico, 2015).

The use of electronic portals, an instrument applied for public transparency, allows the government to use this technology to broaden its communication with society, since more people can access information and better monitor government actions (Raupp & Pinho, 2011; Pinho, 2008). Following this guideline, the Executive Branch of the State of Santa Catarina developed and maintains a transparency Portal (transparencia.sc.gov.br) for the population to access content in the Internet environment. This portal constitutes the object of the present research and its study was motivated by the fact that the authors acted on the theme of public transparency in the academic and professional environment. In a special way, one of the authors actively participated in the transparency Portal's reformulation and management project, launched in 2017. Therefore, the search for carrying out the research enabled us to combine the knowledge of practical with the academic experience, opening up space for contributions to state transparency.

Among the data and information disclosed, there are those related to government areas, identified by the function of public expenditure, such as Education, Health and Public Safety (Ordinance number 42, 1999). As regards the choice of the Education area as a focus of study, to the detriment of other areas, it is noted that Education meets a social and universal right that states provide to society free of charge and with priority to elementary and high school education. It is the area in which at least 25% of the tax revenue (Constitution of the Federative Republic of Brazil, 1988) needs to be applied annually.

According to the Transparency Portal of Executive Branch, after Social Security, the highest accumulated expenses between 2016 and 2020 were intended to Education. In this period, the committed values were R\$ 28 billion, which corresponded to 17% of the total public expenditure of the Executive, which was applied directly by the state structure or passed on to other entities, such as the municipalities of Santa Catarina state (Santa Catarina, 2020). Therefore, Education is an area that receives large volumes of resources and is associated with constitutional rights, as well as presenting a close relationship with the population, which allows specific studies. Improvements in the Education transparency are important so that the State can meet the informational demands of this area relevant to society.

Within this perspective, the Article has as its subject the public transparency of the State Executive Branch and introduces as a problem, from the perspective of opportunity for improvement, the identification of the Education contents that can be disclosed to improve the state transparency, through the transparency Portal of the Executive Branch of Santa Catarina, from the demands of the society forwarded in the requests for LAI information. In order to address the problems, the objective of this Article is to propose guidelines for improving the data and public information transparency in the State of Santa Catarina, related to Education, through the Transparency Portal of the Executive.

Regarding the aspects that understand the motivation for the study, the main ones are: The possibility of identifying data and information of general interest that have been answered by requests for information from LAI and may be included in the Portal; the establishment of studies that are positive for content other than those established in the transparency legislations (federal and state); the possibility of recommending the disclosure of non-financial data and information, since the public finance subject prevails in the Portal; the opportunity to carry out studies to indicate advances in the contents dissemination of the state outcome areas, with little emphasis on

the Portal; the possibility of contributing with propositions for the opening and sharing of data and information that meet the recent management model of the State Public Administration, which determined the implementation of a transparency-based government, as provided for in complementary Law number 741, of June 12th, 2019; the contribution to the project of open data, currently under development in the State, which requires studies to include new data.

In previous studies directed at the transparency portals, the content propositions for the portals appear as an integral part of some publications, and the academic production of targeted studies is scarce and systematized using attributes of the quality of information as requirements for this purpose. Basically, the publications involve two approaches: the first one is aimed at the evaluative aspect of the portals, and can use attributes of the quality of the information for this purpose and present general improvements propositions (Lima, Schramm, Coeli, & Silva, 2009; Allegretti & Platt Neto, 2010; Cruz, Ferreira, Silva, & Macedo, 2012; Freire, 2014; Jahns & Raupp, 2016; Máchová & Lnenicka, 2016; Souza, R. J., Barbosa, Cabral, & Santos, 2019; Curto-Rodríguez, 2020; Silva, Monteiro, & Reis, 2020).

The second approach brings the investigative aspect of the society's information demands, but without using attributes of the quality of information, and may present proposals for the portals improvements (Almeida, 2015; Barbosa, 2015; Gama, 2015; Carossi & Teixeira Filho, 2016; Calvosa, Silva, & Krakauer, 2017). In this approach, there are specific studies on Education transparency. These are two findings that are aimed at higher education institutions (Gama, 2015; Carossi & Teixeira Filho, 2016). It is noticed the lack of specific studies of transparency in education aimed at the state portals and also the use and attributes of the quality of information. The study contributes to bringing this new view of applicability to the portals, observing the governmental areas and especially Education.

Therefore, systematized studies that address the attributes of the quality of information have not been used in this propositional conception, materializing a gap identified in the literature. In this sense, the systematized way to generate propositions using attributes of the quality of information, based on Platt Neto, Da Cruz, Ensslin e Ensslin (2009), Trindade, Oliveira e Becker, (2011) and Arouck (2011), ends up being a differential of the present study, as well as its positive contribution to the transparency of the Education area.

The Article starts with this Introduction, followed by the theoretical contribution required to support the object investigated. Afterward, the methodological procedures adopted for the carrying out of the research are addressed. After that, the results achieved are presented, with emphasis on the categorization of requests for information, description of the attributes of the quality of information, and improvements in the contents for Education. The Article is concluded with the study conclusions.

2 THEORETICAL ASPECTS

2.1 Public transparency

Transparency has been the driving force for improvements in various organizational aspects and for the sake of society. It is considered a cornerstone for good governance and can improve decision-making, increase accountability, and promote more informed and comprehensive citizenship. This set of benefits leads public organizations to be more responsive and reliable (Porumbescu, 2015). In studies on corruption, transparency is related to the existence of tools and institutions that work to reduce the corruption practices of a country. For political science, this concept is associated with the disclosure of information by governments to internal and external actors, which are later used as an instrument of accountability (Zuccolotto, Teixeira & Riccio, 2015).

For Meijer (2013), transparency is defined as the availability of information about an actor that allows other actors to monitor the functioning or performance of the same, thus generating an

institutional relationship for the exchange of information of this actor, in this case the government. Grimmelikhuijsen and Welch (2012) emphasize that the definition of transparency is related to the extent to which an organization reveals relevant information about its decision-making processes, procedures, activities, operation and performance. This allows for an “internal observability” that enables people outside the organization to monitor these issues. In this sense, transparency is understood as the availability of information about an organization or person that allows other external actors to monitor the functioning or performance of the organization (Grimmelikhuijsen & Welch, 2012).

The information structures provide a more systematic understanding of the types of information of public transparency, because there is a diversity and amount of information to improve it (Porumbescu, 2015). The structure elaborated by Cucciniello, Bellè and Valloti (2014) divides government transparency into four dimensions: 1) Institutional: Information pertaining to the activities of public organizations, such as mission, operations, institutional activities and others required to publish by law. 2) Political: information belonging to political representatives, such as information on their mandate, activities carried out, wage and other information. 3) Financial Management: information on how policymakers make use of allocated financial resources. 4) Services Provision: information on how the government operates in the services provision (Cucciniello et al., 2014).

Public transparency can be understood from the mechanisms that allow access to public information, either through government initiatives in a proactive manner or when encouraged to respond to requests for information, materialized in requests for information from citizens (Angélico, 2015). From this perspective, Zuccolotto and Teixeira (2019) present some classifications of transparency, such as that related to the initiative that establishes active transparency or passive transparency. The former refers to the periodic and systematic dissemination of information on state management so that society can assess government performance. Information about the services provided, performance indicators and others is required on a website. Whereas passive transparency, is the obligation of the public authority to grant, to all citizens who require, timely access to public documents, except those that are protected for reasons of secrecy (Zuccolotto & Teixeira, 2019).

A portal is a gateway to the Internet and can represent a place of intense visitation by virtue of the services and information it offers to the visiting citizens (Raupp & Pinho, 2011). The transparency portals provide public data and information regarding state financial activity, allowing the citizens’ analysis and control. The contents refer to public accounts, signed contracts, bidding processes, public works and other government actions. Each state has the mission to create its portal to make this available (Sales, 2012).

2.2 Access to public information

The right to access to public information is understood as a human right, since it is part of the right to freedom of opinion and expression, as well as the right to seek, receive and transmit information. It is recognized in international declarations and agreements (Angélico, 2015; Bento, 2015). Among them is Article XIX of the Universal Declaration of Human Rights. (UDHR), which states that everyone has the right to freedom of expression, including receiving information and ideas from any means and independent of borders (United Nations, 1948).

Access to public information in Brazil has had important legal milestones in recent decades. The advent of the “Citizen’s Constitution,” the name of the Federal Constitution (CF) of 1988, has established citizens’ rights, such as access to information, listed in sections XIV and XXXIII of Article 5, which guarantees everyone the right of access to information of particular, collective or general interest, that will be provided by public bodies, within the law time limit, except for cases of secrecy (Constitution of the Federative Republic of Brazil, 1988).

Article 37 of the FC (caput, §1 and II of §3) sets out some principles, especially that of

advertising, which, when relating acts, programs, works, services and public campaigns, must have an educational, informative or social orientation character. The provision also defines that the law will govern the forms and how users access to public information occurs (Constitution of the Federative Republic of Brazil, 1988). The principle of advertising, guaranteed in the FC, establishes that the people have the right to know the acts practiced by the public administration for the exercise of social control and with understanding of information (Platt Neto et al., 2009).

In this context, public information can be defined as a public, tangible or intangible asset, with a graphical, sound and/or iconographic form for the common use of society and being in the ownership of the public entities of all spheres. It considers the public dimension of information produced by the State and opposes private and secret, in cases that have no status of secrecy (Batista, 2010). With the promulgation of Federal Law number 12.527/2011 (LAI), Brazil started to rely on an instrument to detail access to public information. LAI has brought key elements to guarantee the right of access, such as the definition of information for disclosure in portals, the standardization of procedures for formulating requests for information, the rules of secrecy, the deadlines for delivery and other elements to discipline access and disclosure of information (Angélico, 2015; Bento, 2015).

LAI also brings the concept of information as being data, processed or not, that can be used for the production and transmission of knowledge, contained in any medium, support or format. Disclosure should allow recording in electronic, open and non-proprietary formats, and automated access through external systems, establishing a state that works with open data (Law number 12.527, 2011).

2.3 Quality of information

The quality of the information is approached by different areas of knowledge and there is no consensus in the literature on theoretical and operational definitions due to the subjectivity involved in the concept and its multidimensional aspect (Paim, Nehmy & Guimarães, 1996; Trindade et al., 2011; Valente & Fujino, 2016). For Madnick, Lee, Wang and Zhu (2009), although there was no consensus on the distinction between data quality and information quality, there is a tendency to use data quality for technical issues, such as the integration of data from different sources, and quality of information to refer to non-technical issues, such as the organizations' strategies for information being in a format, place and appropriate time to be made available to stakeholders. For the purpose of this Article the terms shall be interchangeable and the terminology of the quality of the information shall be adopted.

Wang and Strong (1996) defines the quality of data as the data that are suitable for use by their consumers. The definition follows the general literature of quality, which deals with the concept "fitness for use". This concept emphasizes the importance of observing quality from the consumer's point of view, because ultimately it is the consumer who checks whether a product is suitable for use (Wang & Strong, 1996). Therefore, the definition used focuses on the user of information and emphasizes whether the product, in this case the content (data and information), is adequate.

The quality of information presents a vast field for experimentation and application, which can add value both to the organization and to the academic environment. In the models implementation it is important to identify the informational need, the ontology applied to meet this need and to seek the completeness of the application, not only defining or adapting a model, but performing the application in the real world (Calazans, 2008). On the other hand, although the quality of information is a non-recent field of study, it faces organizational problems in its theoretical field (Lima & Maçada, 2008). In this sense, the theoretical body is broad and not consolidated, which makes the research refer to concepts that aim to meet the need and practical application of this research. Table 1 presents the quality of information attributes based on Platt Neto et al. (2009), Trindade et al. (2011), Arouck (2011) and Law number 12.527 (2011).

Table 1
Relation of quality of information attribute

Dimensions	Attributes	Description
Utility: characteristic of information to possess some use. It characterizes the information that serves or is necessary for something. Based on the relevance of the information and the reliability that it intends to provide a guarantee of the truthfulness of what is disclosed.	Accuracy	The perception that the information is correct. The system information represents the real world situation.
	Authenticity	Quality to be produced, received or modified by individual, equipment or system.
	Reliability	It comprises the ability to deliver, as promised, safely and accurately.
	Credibility	It identifies the ability to be credible, to be trustworthy.
	Availability	Quality of information that can be known and used by authorized individuals, equipment or systems.
	Importance	Characteristic of information to be indispensable for action or decision making.
	Integrity	Quality of information not modified, including origin, transit and destination.
	Relevance	The information must be related to the user's interest and information needs.
	Value	Information provides benefits and advantages with its use.
Understandability: Ability of information to be understood, acquired, understood. Related to visual presentation, including formatting information and accessible, simple, and user profile-oriented language use.	Informative Value	It is the ability to provide meaningful data and information for the intended purpose.
	Presentation	Information can be presented in narrative, numeric, graphic, or other form.
	Clarity	Information should be provided in a way that is easy to understand.
	Source	Who produced the information.
	Format	How the information is presented. Set of attributes related to physical, visual, information presentation.
	Intelligibility	Information is easily understood.
	Interface	Consistency in the structural arrangement and style of information content and <i>hyperlinks</i> within the application.
	Interpretability	The information is available in appropriate language and symbols, and the definitions are clear.
Temporality: the information is sufficiently up to date. The age of information is adequate for the user's need.	Media	Information can be provided as printed paper documents, video monitors, or other media.
	Simplicity	Simple presentation, from basic elements.
	Up-to-Datedness	How much information is up to date.
	Frequency	The information must be provided as many times as necessary.
	Age	Time elapsed since production.
	Period	Information can be provided about past, present, or future periods.
	Advertising	Wide dissemination of information to the population.
	Timing	Information should be provided when necessary.

Source: Adapted by the authors (2020), based on Platt Neto et al. (2009), Trindade et al. (2011), Arouck (2011) and Law number 12.527 (2011).

The facet of multidimensionality of information quality demonstrates that there are several propositions of characteristics, dimensions, categories and attributes to qualify information, according to the context applied. These quality attributes are used to define, measure and manage the quality of data and information, presenting variations according to the studies used (Valente & Fujino, 2016).

3 METHODOLOGICAL PROCEDURES

3.1 The case analyzed

The Transparency Portal of the Executive Branch is an instrument of social control that

enables citizens to follow up information from the State's collection, the application of public resources and other information from state management. It promotes active transparency through the dissemination of contents with ICTs (Santa Catarina, 2018; Santa Catarina, 2020).

The Portal is available on the Internet (www.transparencia.sc.gov.br), where citizens can access and navigate in various features, such as the citizen's question, the transparency map and the menus of the four major areas (Revenue, Expense, Fiscal Responsibility and State Management) that provide access to other features. The data and information from the Portal comes from some state management systems, such as the Integrated System of Planning and Fiscal Management (SIGEF) and from textual pages and reports from the government areas of the State (Santa Catarina, 2018).

Table 2 presents the summarized contents of Education and its functionalities. Normally it is necessary to select the Secretaria de Estado da Educação (SED) [*State Secretariat of Education*], a Fundação Universidade do Estado de Santa Catarina (Udesc) [*University of the State of Santa Catarina Foundation*], Fundação Catarinense de Educação Especial (FCEE) [*Santa Catarina State Foundation of Special Education*] and associated funds to consolidate or detail the researched consultations.

Table 2
Content of Education on the Transparency Portal

Structure	Content	Functionality
Institutional Information	Servants' Information	Remuneration and Functional Data (Expense Menu)
	Institutional Information	Competences of organs and entities (State Management Menu)
	Information on Movable Properties	Movable Assets (State Management Menu)
	Information on Real Estate	Immovable Assets (State Management Menu)
	General Education Information on SED portal	Indicators (State Management Menu)
	Servants' Legislation	Legislation (Expense Menu)
	Situation of Positions of Effective Provision of Education	Positions Situation (Expense Menu)
Financial Management	Allowances paid to servants	Allowances (Expense Menu); Citizen Question (Home)
	Contracts	Contracts (Expense Menu)
	Tenders	Tenders (Expense Menu)
	Budget Revenue collected by the organ	Detailed Revenue, Revenue Open Data (Revenue Menu)
	Budget Expenditure for the Financial Year and Remaining to be Paid	Detailed Expense, Execution of Remaining to be Paid, Expense and Remaining, Open Data Expense and Remaining to be Paid (Expense Menu); Citizen Question, Expense Panel Gallery (Home)
	Funds Allocation, settlement and payment documents	Search Documents (Expense Menu)
	Supplier Payment List, Payment Card (CPESC), Special Budget Payments	Suppliers, Payment Card (CPESC), Special Budget Payments (Expense Menu)
	Bank statements of current accounts	Bank Statements (Fiscal Responsibility Menu)
	Monitoring of the investment of 25% of tax revenue and 60% of the remuneration of FUNDEB	Budget Execution Summary Report (RREO) of LRF; Education and Health Expenditures (Fiscal Responsibility Menu)
	Information on Public Budgets in Education (SIOPE) generated by FNDE	Public Budgets in Education (SIOPE) (State Management Menu)
Multi-Year Plan Information (PPA), Budget Guidelines Act (LDO), Budget Guidelines Act (LOA) and PPA follow-up	PPA, LDO, LOA, Multi-Annual Plan Monitoring (Fiscal Responsibility Menu)	
Provision of	Agreements with Municipalities and	Mandatory and Voluntary transfers, SC Downloads

Services	entities	(Expense Menu)
	Stock and Warehouse	Stock and Warehouse (State Management Menu)
	Public Works	Transparency Map (Home or Expense Menu); Data Open Works (Expense Menu)
	Information on University Scholarships Programs	Graduation, Post-Graduation (Expense Menu)
	Information on the Government Annual Reporting	General Balance (Tax Liability Menu)
	List of state schools	Search Schools (State Management Menu)

Source: Elaborated by the authors (2020).

3.2 Research steps, collection instruments and analysis techniques

In the first stage of the research - *Characterization of the Transparency Portal* - documentary research was used through the collection and selection of documents and the access to the Portal pages, being carried out in the second half of 2020. Data analysis was documented based on information from the documents collected.

In the second stage - *Description of the Content on Education* - a documentary research was used to collect the information on the Portal of the current stage of Education content, following the analysis model. The search was made by access to the Portal and associated web pages in the second half of 2020. Data analysis was documented from the Portal investigation and resulted in a descriptive text.

In the *Identification of the Society Demands*, the third stage, data were collected through the documentary research technique, represented by requests for information based on the LAI of the Education area, which were forwarded by citizens to the State in 2019. The database request was made through a request for information based on the LAI, forwarded to the General State Ombudsman (OGE), using the e-SIC electronic form (www.ouvidoria.sc.gov.br/cidadao/). The data were received through an electronic spreadsheet. Using the documentary analysis, the initial analysis of each request was performed, removing 10 of particular interest (requests for personal demands, such as requests for documents) and structuring the database for analysis. Subsequently, the content analysis was carried out, using as reference the steps established by Moraes (1999), the preparation of information being applied; the categorization of applications; the description and interpretation. A categorized database was structured and points of analysis were described.

In the fourth stage - *Proposals for Improvement* - the alternatives for improving the data and information in the Education area were identified. This step was the result of systematization of the previous steps in the light of the analysis model, which established classifications and focused on the quality of the information.

3.3 The analysis model

The analysis model was structured for the contents identification and proposition, comprising four dimensions and eight categories, described in Table 3. The Identity dimension refers to the concepts of the Information Structure and the Electronic Government Controlled Vocabulary (VCGE), aimed at categorization. The other dimensions followed definitions of information quality attributes.

Table 3
Analysis Model

Dimensions	Categories	Theoretical Basis
Identity It defines a nomenclature and classification of the content	Content Identification of the content by defining a name	Ministry of Planning, Budget and Management. Secretariat for Logistics and Information Technology (2016): VCGE (Basic Education and Higher Education) Cucciniello, Bellè and Valloti (2014): Structure of Information (Institutional, Financial Management, Provision of Services)
	Classification Identification of type of improvement (new or existing)	
Utility It addresses the usefulness of the dissemination of content and the sources of disclosure	Relevance Aspects that demonstrate the content usefulness and importance	Arouck (2011): Reliability, Credibility, Importance, Relevance, Utility, Informative Value Law n.º 12.527 (2011): Authenticity, Integrity Trindade, Oliveira and Becker (2011): Accuracy, Source, Value, Reliability, Relevance Platt Neto et al. (2009): Reliability, Utility, Relevance
	Reliability Ways to demonstrate the reliability of the published content (system, organ, author, among others)	
Understandability Aimed at the presentation of the content in terms of language, forms, formats and place of disclosure	Language It deals with the nomenclatures and information for understanding the composition of the content	Arouck (2011): Clarity, Sensitivity, Format, Simplicity, Interpretability Law n.º 12.527 (2011): Availability Trindade, Oliveira and Becker (2011): Presentation, Clarity, Format, Intelligibility, Media, Interface, Interpretability Platt Neto et al. (2009): Presentation, Understandability, Disclosure, Language
	Presentation Related to the forms (query, text, graphic, file), retrieval formats (pdf, csv, etc.) and location of the content disclosure	
Temporality Related to the temporal aspects of the content for updating and maintaining the content availability	Timing It indicates the required content refresh interval (daily, monthly, annual, etc.)	Arouck (2011): Up-to-datedness, Timing. Trindade, Oliveira and Becker (2011): Up-to-datedness, Frequency, Age, Period, Timing, Temporality Platt Neto et al. (2009): Timing
	Historical Series It establishes the period of time that initiates the content disclosure	

Source: Elaborated by the authors (2020).

4 RESULTS

4.1 Categorization of information requests

The 51 requests of general interest were categorized in the content analysis stage from the reading and interpretation of each request, using categories of theoretical reference and others created during the analysis. A first categorization was related to the educational system using the terms of the VCGE (Basic Education and Higher Education). The result showed that 88% of the requests are from Basic Education (45 requests) and 12% from Higher Education (6 requests).

The categorization of the information structure observed the dimensions of Cucciniello et al. (2014), using three of them. The results showed that 58,8% (30 requests) are associated with “Services Provision”, 29,4% with “Institutional Information” (15 requests) and 11,8% with “Financial Management” (6 requests). Two analytical categorizations (subject matter and subject detail) were created to gather the orders and generate the propositions. Table 4 presents these categories and their relations.

Table 4
Contents Classification

Information Structure	Subject	Subject Detailing
Institutional Information	Human Resources	Contests
		Servants' Information
		Servants' Legislation
	Organizational Structure	Institutional Legislation
Financial Management	Expenses	Education - State
		Schools
		School Teachers and Servants
		University
Provision of Services	Actions and Results	Students' Evaluations
		Programs and Projects
	Agreements and Transfers of Resources	Parents' and Teachers' Associations
		University Grants
		Private Schools
	Services Information	School Functioning
		School Data
		Students
Positions Offer		
School Teachers and Servants		
		University

Source: Elaborated by the authors (2020).

The greater volume of information demands intended for the Services Provision demonstrates a lack of contents of this aspect which is quite important in which the State discloses to citizens how public services and the results of the services provision are being performed and delivered. The information demanded by citizens presents needs for the informational improvement of transparency about Education. To this end, the Transparency Portal, the main instrument of disclosure, can aggregate and facilitate access to these contents.

The use of the quality of the information attributes proposed contributes to guide the identification and formulation of proposals that meet the society demands, applied here from a universe of LAI-based information requests, which can thus generate guidelines for future implementation of the Portal, observing the attributes of relevance, reliability, language, presentation, timing and historical series.

4.2 Description of quality of information attributes

In the content analysis, findings were generated from the information quality attributes described below:

Relevance: observed from the interest in better knowing the Santa Catarina teaching in its physical structure, human resources, normative and also specific, such as information from a particular school. Demands to attend academic research, interest in contests, database formation were also verified.

Reliability: identified that most of the claims refer to SED, Udesc (Higher Education) and some cases to SED managements and the State. Thus, the highest levels of state hierarchy were sufficient to demonstrate reliability.

Language: verified in the most repeated words in the order texts, from the elaboration of a *word cloud* with the Atlas.TI® tool (School - 57 words, Education - 43, Information - 38, teachers - 31, Teaching - 28, State - 28), suggesting nomenclatures and descriptions with daily words of Education, such as “School”.

Presentation: identified demands related to quantitative, lists, values, such as the number of teachers and students. In relation to the formats, there were requests in spreadsheets and no specific or proprietary format was identified.

Timing: observed that most claims refer to information for the year 2019 (timing), given the time of the request. Quantitative contents were normally required per month and year.

Historical Series: in most orders with series, information was requested between 2014 and 2019. The largest series was from 2009 (10 years), suggesting working with 6 years or less. The requests involved quantities, values, and data listing.

4.3 Contents improvements for Education

4.3.1 Thematic Area of Education

Based on the survey of the contents made available on the Portal, a diversity of information and data related to the area of Education was observed, which are available in different consultations, pages and external tools. In this sense, a suggestion to improve the organization of content would be to create a central “Education” page to focus the issues and, from there, generate faster and easier access to all content in the area.

The organization in thematic areas is a practice that is beginning in some state portals, although with little content, but shows a tendency to converge subjects by themes. The findings were identified in the portals of transparency of Espírito Santo, Paraná, Maranhão and São Paulo (Espírito Santo, 2021, Paraná, 2021; Maranhão, 2021; São Paulo, 2021) and demonstrate a relationship with the theoretical categories Comprehensibility (Arouck, 2011; Law number. 12.527, 2011; Platt Neto et al., 2009; Trindade et al., 2011) and Content Usefulness (Arouck, 2011; Law number 12.527, 2011; Platt Neto et al., 2009; Trindade et al., 2011). Another finding of this trend is the implementation of groups, areas or themes. In the open data portal of the Distrito Federal it is explained that the use of themes (Health, Education, Transport) is carried out to create and manage the data by subjects, helping those who consult to find common affairs data (Distrito Federal, 2021).

The access to the thematic page could be present on the main page of the Portal to facilitate identification and stimulate the population of interest. Regarding contents composition, it is suggested to implement filters in the Education area (organ, expense function, etc.) in existing consultations and make them available on the thematic page to start implementation.

The examination of the requests revealed the need to provide general data and the details of the applications, such as presenting the total of schools and the data of each one separately (a specific page of each school could be directed and created). It is suggested to make available from the same information source, such as presenting the total of Education works and breaking them up for each school. The contents centralization may help consolidate Education data into the State Open Data Portal. Therefore, the creation of the thematic page “Education”, associated with a citizen language for names and texts, tends to help citizens better access and understand the contents of Education. These findings show a relationship with the theoretical category Utility (Arouck, 2011; Law n.º 12.527, 2011; Platt Neto et al., 2009; Trindade et al., 2011).

4.3.2 Contents Propositions

The propositions emerged from the content analysis of requests for information and the content disclosed on the Portal, identifying new content proposals and improvements in existing ones. Tables 5, 6 and 7 present the proposals, by information structure, elaborated by the authors.

Table 5
Summary of Propositions: Institutional Information

Content	Improvement	Relevance	Reliability	Language	Presentation	Timing	Historical Series
Contests Information	New content	To disclose work opportunity in the State	Manager data (secretariat, board, management)	“Contest”	Text and files webpage. To disseminate files in “pdf” format of the public notices.	Annual	From 2017
Number of Education Servants and functional Data	Content improvement	To know the human resources structure of the State and other functional data	Data from the Human Resources System and System Manager (Secretariat)	“Education Servants Information”	Query type page, similar to “Functional Data Remuneration”, filtering the Education organs. Maintain the “csv” format	Monthly	From 2019
Legislation of the Basic Education Servants	Content improvement	To provide advertising to the servants’ legal aspects more easily	Manager data (secretariat, board, management)	“Education Servant Legislation.”	Servant Portal page (legislations) for Education, creating thematic areas and “Q&A” service. “Pdf” format files	Annual	From 1996 (based on Law number 9.394/1996)
Higher Education servants Legislation	New content	To advertise the laws and servants’ legal aspects with ease of access and understanding	Manager data (secretariat, board, management)	“UDESC Servant’s Legislation”	UDESC Portal Page, creating thematic areas and “Q&A” service. “Pdf” format files	Annual	From 1996 (based on Law number 9.394/1996)
Basic Education Legislation	New content	To improve advertising and access to the legislation of Santa Catarina state education	Manager data (secretariat, board, management)	“Basic Education Legislation”	Texts and files page for Education legislations, creating areas for specific subjects. “Pdf” format files	Annual	From 1988 (basis in the Federal Constitution)
Higher Education Legislation	New content	To improve the advertising of higher education legislations	Manager data (secretariat, board, management)	“Higher Education Legislation”	Texts and files page for Education legislations, creating areas for specific subjects. “Pdf” format files	Annual	From 1988 (basis in the Federal Constitution)
Structuring of Santa Catarina state Basic Education	New content	To publicize the organization of Santa Catarina state teaching	Manager data (secretariat, board, management)	“Santa Catarina State Basic Education”	Texts and files page, including reports in “pdf” format	Annual	From 2019

Source: Elaborated by the authors (2020).

Table 6
Summary of Propositions: Financial Management

Content	Improvement	Relevance	Reliability	Language	Presentation	Timing	Historical Series
Teachers' Remuneration	New content	To disseminate important financial information to society	Data from the Human Resources System and System Manager (Secretariat)	"Teachers' Salaries"	Page "Remuneration and Functional Data" of the Portal for Education, creating an area at the top (graphics and values). Inclusion of a report in "csv" of the calculated database	Monthly	From 2013 (query series)
Expenditure on Schools Electric Energy	New content	Construction of a national energy consumption database in schools	Data from the Human Resources System and System Manager (Secretariat)	"Expenditure on Schools Electric Energy"	Query type page with filters for school choice, predicting to make the data available in "csv" format	Monthly	From 2018
Full-time High School Spending (EMITI)	New content	To advertise EMITI related expenses	Manager data (secretariat, board, management)	"Full-time High School Spending (EMITI)"	Texts and files page, predicting the inclusion of reports in "pdf" and "csv" format	Annual	From 2017
Military Schools Expenses	New content	To advertise spending on Military Schools	Manager data (secretariat, board, management)	"Military Schools Finances"	Text and files webpage. Financial reports in "pdf" and "csv" format	Annual	From 2015
Udesc Tenders Information	Content improvement	To advertise Udesc's tenders, waivers and impossibilities	Financial System Data and System Manager (Secretariat)	"Udesc's Tenders"	Query type External page , with documents in pdf, doc, csv	Daily	From 2019

Source: Elaborated by the authors (2020).

Table 7
Summary of Propositions: Provision of Services

Content	Improvement	Relevance	Reliability	Language	Presentation	Timing	Historical Series
School Performance	New content	To know the students' average evaluation	Financial System Data and System Manager (Secretariat)	"School Performance"	Query type page, with filters by schools, with data in "csv"	Annual	From 2018
Information on Education projects	New content	To disclose information of Education projects	Managers in charge data (secretariat, board, management)	"Education Programs and projects"	Texts and files page with separate areas for each Program or Project, in "pdf" format	Annual	From 2019
UNIEDU's University Scholarships	Content improvement	To disclose proof of receipt of benefit document	To include managers (secretariat, board, management)	"UNIEDU's University Scholarships"	To keep the current texts and files Page	Annual	From 2011 (today: from 2013)
Agreements with Parents' and Teachers' associations	New content	To demonstrate detailed information about agreements with APPS.	Financial System Data and System Manager (Secretariat)	Agreements with Parents' and Teachers' associations	"Mandatory and Voluntary Transfers" Page adapted to inform only APPS' creditors, in "csv" format	Monthly	From 2013 (as per query)
Agreements with Private Schools	New content	To demonstrate agreements with private schools	Manager data (secretariat, board, management)	"Agreements with Private Schools"	Texts and files page in "pdf" and "csv" format	Annual	From 2019
Information on the school' functioning	New content	Detailed disclosure of information of each school	Manager data (secretariat, board, management)	"School's Information <school name>"	"School Information + school name", divided by content. Data in "csv" or "pdf"	Daily, Monthly and Annually (as per content)	From 2019
General and Statistical Data of Udesc students)	New content	Detailed disclosure of UDESC information	Manager data (secretariat, board, management)	"Udesc's students"	Text and files page divided by content, in open format "csv" or "pdf"	Monthly (as per content)	From 2019
General and statistical data of schools	New content	To present general overview of schools	Financial System Data and System Manager (Secretariat)	"State Network of Education – Basic Education"	Page and "Schools' Map". Formats "csv", "pdf" and "png" (map)	Monthly (as per content)	From 2019

Content	Improvement	Relevance	Reliability	Language	Presentation	Timing	Historical Series
Data of Basic Education students	New content	To present overview of students	Financial System Data and System Manager (Secretariat)	“Basic Education Students”	Queries, texts and files with data in open format “csv”	Monthly	From 2019
Teachers’ and servants’ data	New content	To present overview of teachers and servants	Financial System Data and System Manager (Secretariat)	“Basic Education Teachers and Servants”	New page with queries, texts and files containing panels and filters, in “csv” and “pdf” format	Monthly	From 2019
Data of Vacancies in Schools	New content	To advertise the situation of vacancies in schools	Financial System Data and System Manager (Secretariat)	“Vacancies in the State Schools”	New page of query type, with data in open format “csv”	Daily	From 2020 (monthly)

Source: Elaborated by the authors, 2020.

The institutional information in Table 5 includes seven propositions that address organizational issues of Education, such as its structure and human resources. It groups information on public contests, general quantitative and legislation of the servants, the disclosure of general regulations, legal procedures and content to inform the organization of Santa Catarina state education. As for financial management (Table 6), the five proposals are for financial aspects of Education, such as the availability of a historical series of basic salary and average remuneration paid in recent years. The other issues are focused on the expenses of schools, such as electricity, and certain types (EMITI and military schools) and, regarding information on the bidding processes of Udesc.

In services provision (Table 7), the eleven propositions gather information from the school evaluation and from some projects and programs. Also included are the contents of agreements with private schools and APPS, the information about the functioning of schools and the UDESC, and various data from schools, students, teachers, servants and the provision of schools vacancies, which seek to present a general overview of education services.

Tables 5, 6 and 7 synthesize the proposals undertaken, 4 of the 23 propositions (17.4 %) being classified as 'already existing content improvement' and 19 (82.6%) are considered 'new content'. As the name itself indicates, propositions classified as 'new content' are not currently available on the Transparency Portal. In terms of the impact of the propositions in relation to what is provided as information, the guidelines provide alternatives for improving the state public transparency of Education through the Portal, which by being implemented may bring facilities in access, convergence and availability of new contents on the Internet to meet citizens' information demands and facilitate the exercise of social control.

5 CONCLUSION

The objective of this Article was to propose guidelines for improving the data and public information transparency in the State of Santa Catarina, related to Education, through the transparency Portal of the Executive Power. To meet the objective, contents were searched on the Portal and 61 requests for LAI-based 2019 information were analyzed. The results showed that 88% of the requests refer to Basic Education and 12% to Higher Education. Another analysis showed that 58,8% are associated with "Services Provision", followed by 29,4% of "Institutional Information" and 11,8% of "Financial Management". With this, it is observed that the population has been demanding more requests for Basic Education and Service Provision, indicating priority in implementations to meet these expectations and avoid recurring requests.

23 propositions were developed from the dimensions and categories established in the analysis model. The subjects refer to organizational, human resources, school, university, services information, of shares and results, expenses, and agreements and transfers of resources. The proposals turn to general aspects, such as the number of students, teachers and schools, but also address categorizations and details, such as those related to each school to disseminate them in particular. It is suggested to create a page on the subject "Education", as an integral part of the Portal, to concentrate the repertoire of contents of the area, directing to other pages of the Portal and external ones, constituting a place that gathers information from Education. In addition to the suggested proposals, the thematic page could include content of Education from the application of filters in this area in existing functionalities of the Portal, facilitating access to information by citizens.

Besides the practical implications, regarding the attributes of the quality of information, the research also leaves its theoretical contribution to the development of a model of analysis composed of attributes that could systematize the collection, diagnosis and proposition of the contents. This model was composed of four dimensions and eight categories. The first dimension defined identity by establishing a nomenclature for content and ratings. The other dimensions were dismembered into categories that addressed aspects of utility (relevance, reliability),

comprehensibility (language, presentation) and temporality (temporality and historical series) of contents. Upon identifying the lack in research with models to systematize processes of identification, diagnosis and generation of contents propositions using attributes of the quality of information, it was necessary to develop an analytical model of its own to meet the established objective. Thus, the development of an analytical model with the use of attributes of the quality of information is a theoretical contribution of the present study, which has made it possible to make a connection to know the contents arranged, to seek the alternatives and to present the recommendations proposals, thus, it is a systematized guide to a paper involving contents.

The study has shown that there are aspects that can be worked on to improve state transparency for Education and it is beneficial to observe the attributes of the quality of information to guide and propose improvements. The research does not cover future studies on this subject and suggests that they follow the LAI guidelines that guide the dissemination of content using ICTs, creating fast, interactive and available forms on the Internet to facilitate the exercise of social control by the population. As a study limitation, the database of one-year requests for information (2019) was used in view of the need for textual verification of each request by the state agency before it was made available. New research may use different years to collect new informational demands and even to ratify the identified propositions. The study can be applied in other areas of government, such as health and public safety, and it can be used as a reference for other governmental entities, such as states and municipalities.

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