

# DIAGRAMMING TECHNIQUES OF PRINTED VS. DIGITAL SCHOOL TEXTBOOKS FOR BASIC EDUCATION IN A PUBLISHING HOUSE OF RIOBAMBA

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**Abstract:** *This study analyzes the techniques used by EDIPCENTRO in the production of the “Mi praxis 4” copy of Language and Literature for the fourth grade of an elementary school in printed and digital versions through composition patterns that identified its graphic level. The inductive, mixed and documentary bibliographic approach was applied, reviewing the school texts later analyzed by technical cards. The composition patterns, diagramming fundamentals and grid elements were examined by comparing the evolution of the didactic material after the pandemic and the change of study modality. In addition, surveys were carried out to students, teachers and parents to know the importance of graphic techniques in those who use the material. The results of the qualitative analysis by means of the matrices indicated that the transition from print to digital school text was performed with better accuracy, improving aspects previously erroneously performed, such as the visual break obtained through the Sophia Platform and preserving other graphic aspects from one version to the other. On the other hand, the statistical data resulting from the surveys showed the reception by the respondents to the school text with a total of 94% of acceptance and reception, allowing to validate the hypothesis statement. In conclusion, the importance of the good execution of diagramming elements in a didactic material was established and confirmed. The change of study modality was based on the aesthetic and functional development of school textbooks, aspects that influence the purchase decision. It is recommended to analyze diagramming techniques in school textbooks of other types, educational or editorial categories in order to associate them with the way they function, using reliable sources for the collection of information.*

**Keywords:** <GRAPHIC DESIGN>, <DIAGRAMMING>, <DESIGN PATTERNS>, <RETICLE>, <SCHOOL TEXTS>, <PRINT SUPPORT>, <DIGITAL SUPPORT>, <LANGUAGE AND LITERATURE>.

## INTRODUCTION

Children in their early stages of study need materials that allow them to increase the possibilities of cognitive development that they are beginning to obtain in their academic life. Following the 2020 pandemic, such study materials unexpectedly revolutionized the way teachers, parents, students and publishers acted, so they had to make drastic changes in the way they taught new classes. On the one hand, the precursors of providing the materials that teachers would use to teach classes, began to see how to provide them and especially to survive the looming crisis. School textbooks in digital version began to emerge, linked to digital platforms to the use of social networks or devices that allow to observe and use them. From there, the editorial design of educational texts necessarily

evolved and underwent big and small changes that allowed them to survive the digital era without leaving aside traditionalism, having educational books in printed and digital versions nowadays.

## **THEORETICAL FRAMEWORK**

### **Language and Literature**

Learning language and literature helps a person to obtain indispensable competencies to communicate and interact effectively orally or in writing. Sociocultural processes help learning and developing the mind superior to any other individual. Linguistic competence goes beyond decontextualizing learning of grammar and spelling rules, dictation, memorization of rules or others (Cassany et al., 1998; cited in Rodríguez, 2021, pp. 57-58).

The subject of Language and Literature is the first step for the human being to emerge in the real world. From learning to speak, read, write and all the rules that constitute it to the development of all the skills and knowledge in communication situations.

*The teaching of language has always been the most important subject in the schooling of Ecuadorian students. This situation has not changed; what has changed is the approach to language teaching. It is imperative, then, to re-signify what is currently understood by the teaching and learning of this specific area* (Ocampo, 2013 p. 48).

As mentioned by Rodríguez (2021 p. 45), the Language and Literature subject matter used in the EDIPCENTRO publishing house has 6 books for basic education called “Mi Praxis,” among other books that are only critical readings of some authors.

#### **2.2.1 Characteristics of the area**

Within the new regularities and new requirements by the Ecuadorian Ministry of Education, the school textbooks developed by the different publishers will have five blocks: Language and Culture, Oral Communication, Reading, Writing and Literature (Rodríguez, 2021 p. 38).

### **2.3 Comunicación**

According to Fonseca (2000), communicating is defined as:

*Getting to share something of oneself is a rational and emotional quality specific to man that arises from the need to get in touch with others, exchanging ideas that acquire meaning or significance according to previous common experiences* (pág. 4).

*On the other hand, it is found that Miller talks about communication as:*

*Communication can be conceived as the dynamic process that is the basis for the existence, progress, rationale and behavior of all living systems, individuals or organizations. It is understood as the indispensable function of people and organizations, through which the organization or organism relates to itself and its environment, relating its parts and its internal processes with each other* (Miller, 1965, p. 198).

On the other hand, Frascara defines communication from the point of view of design as:

*Communication is the medium of the visual communication designer and represents the specific area of knowledge of professionals. Communication begins with perception. All perception is an act of searching for meaning; in this sense, it is an act of communication or a search for communication. The biological function of visual perception is to provide information about the environment in order to ensure subsistence* (Frascara, 2013, pp. 69-71).

As mentioned by these authors, communication is defined as the process by which man can relate to each other, for designers it constitutes the whole of the graphic pieces where it receives the client's information and transforms it into graphic mechanisms that, in turn, communicate again, as mentioned by Frascara, it begins with the first impression that is obtained of something, whether an object or a particular situation, wanting to find, search or give it its proper meaning.

### **Editorial Design**

*The editorial design has unique characteristics and elements for a specific audience, such as format, composition, page content, among others, and even the hierarchy of the text bodies to have a notion of how they will be structured and distributed. For any of these media to project a sense of unity, it must follow a single pattern* (Guerrero, 2016, pp. 6-7).

When reference is made to the functional and aesthetic distribution of information within an editorial design, it is related to this, to the set of skills in terms of composition, hierarchy and

balance of the distribution of texts, in the location of the image in the space of the page, in the correct choice of typography and its sizes, it refers to absolutely each of these fields to carry out a product that projects in its entirety its objective and achieves its purpose.

### **School textbooks**

*The school textbook is a book that has contents corresponding to a specific discipline, is intended for a specific level -that is, whose recipients are defined in relation to average age- and that presents a series of topics in sequence, accompanied by a variable number of activities, readings and evaluations. Finally, it is one of the leading books teachers and students use for different purposes (Stevenson, 2003, pp. 78).*

Although teaching methodologies differ from teacher to teacher and from institution to institution, textbooks have always been considered a valuable tool for learning, hence their importance; over the years, the production of textbooks has become a business that could be lucrative, but above all, a process that involves several parties to carry it out and that gives the didactic material a validation.

### **Digital school textbooks**

Digital School Textbooks are an emerging strategy that seeks to adapt the textbook to the digital context by developing the 21st Century skills that our students require. Here you will learn about the advances in this topic and why an “Open” School Textbook is the best digital solution to Educate during Pandemic (BCN, 2020).

With the passing of the years and the unexpected events of nature, such as the recent pandemic of Covid-19, school textbooks took an unexpected turn when they were placed on the shore because they could not be obtained during that stage, thus “forcibly” promoting their evolution and introduction to the digital world, leading publishers to find a way to adapt to this modality. Some of those publishers adjusted their contents and presentations to that demand. However, others presented their physical books scanned and uploaded on the web as an “evolution and adaptation” to this era.

### **School textbooks in Ecuador**

In Ecuador, public institutions use textbooks produced and delivered by the State, which consist of a combo of 4 books for the basic subjects: Mathematics, Natural Sciences, Social Studies and Language and Literature, also including English textbooks for the different levels, while, on the other hand, there are private books, produced by specialized and authorized publishers in the country, used as basic material or as a complementary material to the State textbook.

The adaptation of these books, speaking of the books provided to public schools free of charge, and their adaptation to the digital world is, as mentioned above, only in the scanning or presentation in pdf format of the text, coming to consider and conclude that there has not been an analysis or a properly justified work presented to Ecuadorian students, considering from there, one of the main factors why virtual education has generated considerable shortcomings in learning.

### **Publication Layout**

Layout is nothing more than the set of ways in which the information can be distributed, whether in a book, a magazine, a newspaper, etc. In relation to this, Franco mentions: “Layout is defined as the graphic composition of the pages of an editorial element, defining the distribution of the information that will be part of the publication, this is achieved from a mock-up or ideal design” (Franco, 2017 p. 19).

### **Diagramming**

Diagramming consists of knowing how to distribute the space with the information, ornamentally generate a design and know how to carry it out; then, it could be mentioned that the terms diagramming and layout share the same meaning, which would be the same thing. Other definitions are given by Rodriguez and Lascano, contributing and affirming the previous conceptualizations; Rodriguez defines it as: Diagramming is to distribute, and organize the elements of the bimedia message (text and image) in two-dimensional space (paper) by means of hierarchical criteria (importance) seeking functionality of the message (easy reading) under a pleasant aesthetic appearance (appropriate application of fonts and colors) (Rodriguez, 2010).



## METHODS:

The methods presented below are considered as orderly procedures to guide and explain the subject to be investigated:

### ***Inductive method***

The inductive method consists of moving from the particular to the general. Based on the observation of the object of study to compare the data obtained as a result of the analysis matrix of the digital and printed texts of EDIPCENRO Publishing House and, based on the information or patterns found, a generalized conclusion of the information is made.

### **Research techniques and instruments**

The data collection techniques and instruments will be based on obtaining direct information through observation and information gathering in a way that will handle the following:

### ***Document analysis***

This type of technique allows to analyze the contents and manipulate them, to study in depth what it means, what is its message, or subject. This analysis of the documents is done through the text “My Praxis 4” in print and in its digital version posted on the SHOPIA platform, using the technical sheets or matrices made to perform a comparative analysis between both.

### ***Technical data sheet***

This technique leads to collecting information on each text and the comparative analysis of the differences and similarities between the layout of printed and digital school textbooks. These cards are made under analysis matrices where all the information from the material’s observation regarding the fundamentals, grid and layout elements, and how the pages of the two types of materials are structured are considered.

### ***Survey***

This technique allows obtaining and collecting concrete data by means of a designed questionnaire where questions are established without considering in any way to modify the variants. These surveys are designed to be carried out with children 8 and 9 years old in the fourth year of Basic Education to know which graphic elements they observe with more interest and how they receive such graphic information.

Another type of survey with the same purpose is intended for teachers who teach Language and Literature in the fourth year of elementary school and for parents who have children in that age range, in order to know from a different perspective, the design-diagramming factor at the time of purchase and whether they consider this to be an important criterion to be taken into consideration.

### **3.1.6 Population**

The study takes into account EDIPCENRO’s printed and digital texts of the subject of Language and Literature because it is a subject that usually contains a lot of text content and for its study, it is necessary to study it.

The pages to be studied consist of the cover page and four internal pages sectioned into activity page, evaluation page, reading page and block separation page. The aim is to analyze the distribution and placement of the information in order to know the level of functionality and structuring of the texts to the change produced by the emerging virtual modality.

### ***Population 1***

Consisting of a group of 30 children between 7, 8 and 9 years of age who are in the fourth year of elementary school where, as part of their curriculum, they learn the subject of Language and Literature. The purpose of this study was to know how the children observe the details in the didactic materials that are given to them for the learning of the subject.

### ***Population 2***

Aimed at teachers and parents who teach the subject specifically to this age range and who have children in this grade to determine from a pedagogical point of view how teachers receive the information from the books, how they observe the graphic elements of the same, resolving whether the design-diagramming factor is decisive at the time of the purchase of the texts.

### ***Procedure for analysis***

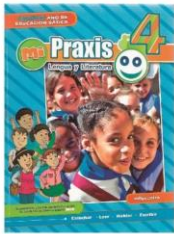
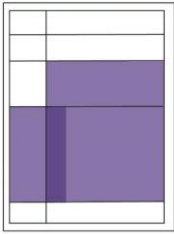
With the matrices correctly completed and the numerical results obtained from the surveys, a comparative analysis of the evolution of the texts before and after the pandemic is carried out under the general conclusions of each matrix and then presented under a joint conclusion that validates or does not validate the hypothesis proposed.

### ANALYSIS AND INTERPRETATION OF RESULTS

Regarding the exercise of the research problem, the compilation of information on both the printed and digital textbook of Language and Literature of Basic Education of the EDIPCENTRO Publishing House has been carried out, focusing on the study of the school textbook Mi Praxis for the fourth year of Basic Education with its last update in printed material in 2010 and its digital application presented through the Sophia Platform in 2020, in order to be able to establish the characteristics of the publishing house in terms of diagramming factors, thus reaching an analysis in which it can be established whether these factors have influenced both the interest of its target audience and their purchase decision.

#### Results of the analysis matrix - printed text

Table 1: Analysis matrix - printed text, cover page

MATRIZ - TEXTO IMPRESO			
PORTADA			
	<p>Formato: Libre - 20,7 cm x 27,3 cm      Número de páginas: 232</p> <p>Composición, jerarquización y ritmo: Composición realizada con utilización de jerarquías tipográficas y de ilustraciones. No contiene mucha información por lo tanto, existe un ritmo únicamente en la tipografía y en la cromática utilizada.</p>		
RETÍCULA	<p>Márgenes:</p> <p>Zonas especiales:</p> <p>Marcadores:</p> <p>Módulos:</p> <p>Columnas:</p>	<p>Derecha: 1.1 cm    Izquierda: 0.6 cm    Superior: 1.1 cm    Inferior: 0.6 cm</p> <p>Se establecieron 2 zonas especiales para gráficos</p> <p>Contiene 3 marcadores, en la parte superior y 2 inferior con mancha de color naranja y verde respectivamente</p> <p>10 módulos</p> <p>2 columnas</p>	
TIPOGRAFÍA	Texto primaria:	Familia tipográfica: Sans Serif	Tamaño: <input checked="" type="checkbox"/> Óptimo <input type="checkbox"/> Regular <input type="checkbox"/> Mala
	Texto secundaria:	Sans Serif	<input checked="" type="checkbox"/> Óptimo <input type="checkbox"/> Regular <input type="checkbox"/> Mala
	Texto terciario y complementaria:	Sans Serif	<input checked="" type="checkbox"/> Óptimo <input type="checkbox"/> Regular <input type="checkbox"/> Mala
	Kerning:	<input checked="" type="checkbox"/> Correcto <input type="checkbox"/> Incorrecto	
	Interlineado:	<input checked="" type="checkbox"/> Correcto <input type="checkbox"/> Incorrecto	
IMÁGENES	Tipo de imagen:	Utilización de dos tipos de gráficos, ilustraciones y fotografía, teniendo un 70 % en fotografía, 20% en ilustraciones y 10% en texto.	
	Equilibrio imagen / texto:	Alto: <input type="checkbox"/> Medio: <input checked="" type="checkbox"/> Bajo: <input type="checkbox"/>	
COLOR	Nivel de atención:	<input type="checkbox"/> Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala	
	Armonía color - contexto:	<input type="checkbox"/> Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala	
	Manchas de color:	<input checked="" type="checkbox"/> Si <input type="checkbox"/> No	


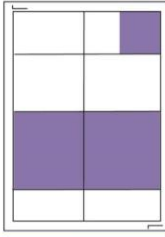
Source: Mi Praxis 4, EDIPCENTRO

Prepared by: Génesis Balcázar, 2022

The cover made for the book Mi Praxis 4, contains well-defined graphic elements that, in most cases, have been well used under the use of a hierarchical grid; however, it is moderately saturated by the use of two types of graphics at such close distance and with similar colors causing these elements are not appreciated correctly.



Table 2: Analysis matrix - printed text, activity page

MATRIZ - TEXTO IMPRESO			
PÁG. ACTIVIDADES			
	<p>Formato: Libre - 20,7 cm x 27,3 cm      Número de página: 15</p> <p>Composición, jerarquización y ritmo: La composición está generada a partir de la jerarquización de textos, existiendo un ritmo continuo en los mismos. Se presenta separaciones con cuadros de texto o filletes de separación para hacer incógnita en las actividades que debe contestar el estudiante.</p>		
RETÍCULA	<p>Márgenes:</p> <p>Zonas especiales:</p> <p>Marcadores:</p> <p>Módulos:</p> <p>Columnas:</p>	<p>Derecho: 1.1 cm    Izquierda: 2 cm    Superior: 1.5 cm    Inferior: 1.5 cm</p> <p>Se establecieron 2 zonas especiales para ilustraciones</p> <p>Contiene marcador en la parte superior (actividades) y número de página</p> <p>8 módulos</p> <p>2 columnas</p>	
TIPOGRAFÍA		Familia tipográfica	Tamaño
	Texto primaria:	Sans Serif	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>
	Texto secundario:	Sans Serif	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>
	Texto terciario y complementario:	Sans Serif	Óptimo <input type="checkbox"/> Regular <input checked="" type="checkbox"/> Mala <input type="checkbox"/>
	Kerning:	Correcto <input checked="" type="checkbox"/> Incorrecto <input type="checkbox"/>	
	Interlineado:	Correcto <input checked="" type="checkbox"/> Incorrecto <input type="checkbox"/>	
IMÁGENES	Tipo de imagen:	Utilización de gráficos de tipo ilustraciones: regular (parte inferior centrada) e irregular (parte superior derecha)	
	Equilibrio imagen / texto:	Alto <input type="checkbox"/> Medio <input checked="" type="checkbox"/> Bajo <input type="checkbox"/>	
COLOR	Nivel de atención:	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>	
	Armonía color - contexto:	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>	
	Manchas de color:	Si <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Source: Mi Praxis 4, EDIPCENTRO

Prepared by: Génesis Balcázar, 2022

The distribution of the information makes the type of hierarchical grid used for its layout noticeable, its special zones are well delimited and there is no imbalance between image and text, nor is there a saturation of elements and color. All the activity pages of the book “Mi praxis 4” are regularly established with colored fillet separations to section their activities, and, generally, they are pages with a lot of written content.

#### ***Analysis and interpretation of the results obtained***


In a general analysis of the diagramming techniques and their components within the pages of the printed book “Mi praxis 4” of the EDIPCENTRO publishing house, there are similar characteristics in all the sections it contains. In general, it uses hierarchical grids that cover two columns, reaching up to three in reduced cases; these columns vary in size and their modules. The margins on each page contained different distance values between 0.8 cm and 2 cm.

The chromatic palette of the school text is placed under the same style, using low tone colors. Peculiarly, the front and back covers, the reading and block separation pages contain more saturated colors used throughout their structure, as opposed to the evaluation and activity pages, which contain white backgrounds as in most pages.

As for the typographic style, serif typefaces are used in 80% of the school book; however, there are certain particularities in the primary texts such as the titles of the readings, separation of blocks and complementary texts, as well as those texts that separate the sections of the text that are made with decorative typography, making their reading and interpretation difficult.

#### **Digital text interface analysis matrix**

Table 3: Analysis matrix - digital text interface, home page

MATRIZ - INTERFAZ TEXTO DIGITAL			
			
<b>Formato:</b> Libre <b>Unidades:</b> 6 unidades <b>Distribución:</b> Por tres columnas irregulares, en la primera se encuentra dividida en dos módulos. <b>Composición, jerarquización y ritmo:</b> El interfaz donde se encuentra el texto escolar está conformado en su parte izquierda con los diferentes accesos alrededor de la plataforma conformado con la utilización de un icono y texto seguido de la posición de la marca. Los varios accesos se encuentran colocados dentro de cuadros de color más claros que el fondo. En la parte derecha se encuentra un cuadro para buscar. Existe un ritmo en cuanto a tipografía ya que toda la interfaz contiene el mismo estilo tipográfico y un ritmo en la utilización de fondo y forma. Dentro de la columna central será colocada la información del texto, en su parte superior se establecerá el nombre del texto seguido de los accesos por las distintas unidades, 6 en total, para desplazar la información en cada una.			
TIPOGRAFÍA		Familia tipográfica	Tamaño
	Texto primaria:	Sans Serif	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>
	Texto secundaria:	Sans Serif	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>
	Texto terciaria y complementaria:	Sans Serif	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>
COLOR	Nivel de atención:	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>	
	Manchas de color:	Si <input checked="" type="checkbox"/> No <input type="checkbox"/>	
	Descanso visual:	Alto <input checked="" type="checkbox"/> Medio <input type="checkbox"/> Bajo <input type="checkbox"/> Nulo <input type="checkbox"/>	


Source: Mi Praxis 4, EDIPCENTRO

Prepared by: Génesis Balcázar, 2022

The interface of the SOPHÍA platform for the book “Mi praxis 4” on its home page is constituted by elements placed under a sequential and orderly order; both the chromatics, typography and visual rest spaces are placed correctly. Distributed under a grid by columns where two of them, the lateral ones, are established under smaller measures than the central one where the pedagogical information of the school text will be placed.

Results of the analysis matrix - digital text

Table 4: Analysis matrix - digital text, home page

MATRIZ - TEXTO DIGITAL			
			
<b>Formato:</b> Libre, vertical <b>Composición, jerarquización y ritmo:</b> Información colocada en una sola columna, la parte gráfica está conformada por una ilustración que conlleva un módulo toda la portada, el nombre del libro con tipografía colorida jugando con tipografías, fondo y color. Existe jerarquización en las tipografías del párrafo escrito.			
REJILLA	Zonas especiales:	1 - para gráfico	
	Módulos:	2 módulos	
	Columnas:	1 columna	
TIPOGRAFÍA		Familia tipográfica	Tamaño
	Texto primaria:	Sans Serif	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>
	Texto secundaria:	Sans Serif	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>
	Texto terciaria y complementaria:	Sans Serif	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>
IMÁGENES	Tipo de imagen:	Gráfico ilustrativa, 50% imagen 50% texto	
	Equilibrio imagen / texto:	Alto <input checked="" type="checkbox"/> Medio <input type="checkbox"/> Bajo <input type="checkbox"/>	
COLOR	Nivel de atención:	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>	
	Armonía color - contexto:	Óptimo <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Mala <input type="checkbox"/>	
	Manchas de color:	Si <input checked="" type="checkbox"/> No <input type="checkbox"/>	
	Descanso visual:	Alto <input checked="" type="checkbox"/> Medio <input type="checkbox"/> Bajo <input type="checkbox"/> Nulo <input type="checkbox"/>	
Nota:			

Source: Mi Praxis 4, Plataforma SOPHÍA - EDIPCENTRO

Prepared by: Génesis Balcázar, 2022

Very well-developed and visually aesthetic page; the colors and shapes are well stipulated, attracting attention at first sight. Being the home page - the cover does not contain much information.

#### ***Analysis and interpretation of the results obtained***

For the digital version of the texts, it was observed that the use of less complex grids was established, generally with one or two columns, which allows that the information placed in them does not overwhelm the student's sight.

It was also noted the visual break that exists in the digital version of the school text, which generates that the subject can give more attention to the elements of the page, especially to those pages that contain more illustrative elements.

A particularity of this didactic material is that its pages of separation of units are established by the use of a black background with wooden borders simulating a school blackboard, varying in each unit the illustration used, concluding, therefore, that each of these pages is executed in an erroneous way causing visual fatigue in the receiver of the image. In addition, these same pages contain typographic families different from those of the other sections, decorative serif typography that adds to the above-mentioned generates harassment and a very low level of attention, decreasing the aesthetic quality that manages the digital text in its other elements.

#### ***Conclusion of the factors that have undergone changes in the transition from print to digital media***

It can be observed that the transfer of information from the printed text contents to the digital one was developed in a more synthesized way, going from the use of two and three columns with several modules, to the use of two columns with one or two modules in each one of them, promoting the existence of more visual spaces in the digital interface of the texts that allow the student and the teacher to rest their eyes from the graphic elements that are presented. It could also be seen how the special areas for illustrative graphics were determined with greater rigor and delimitation within the grids used.

**Table 5:** Matrix and survey-based comparison of diagramming techniques

PAGE	ANALYSIS OF MATRICES	ANALYSIS OF SURVEYS
PRINTED TEXT	<ul style="list-style-type: none"> <li>-Hierarchical grids -</li> <li>Delimitation of well-established margins</li> <li>-Colors with low tonalities</li> <li>-Decorative typographic styles saturate the reading -</li> <li>Background - a figure with low contrast</li> </ul>	<ul style="list-style-type: none"> <li>-Elements that attracted more attention in children were graphics, colors and typography.</li> <li>-The distribution of information is not relevant for children, but for teachers it is.</li> <li>- Format, color, typography and graphics are partially correct.</li> <li>-Size and style of numbering cause visual conflict</li> </ul>
DIGITAL TEXT	<ul style="list-style-type: none"> <li>-Use of two columns, no more</li> <li>-Visual break areas -</li> <li>Saturated unit separation pages.</li> <li>-Less complex grids</li> </ul>	<ul style="list-style-type: none"> <li>-Activity pages are not well perceived by children.</li> <li>-Better developed front page</li> <li>-Interface is not important</li> </ul>

Source: Mi Praxis 4, Plataforma SOPHÍA - EDIPCENTRO



Prepared by: Génesis Balcázar, 2022

### ***Comparative conclusion of matrices and surveys***

Both analyses show that the elements that are positively received by children and adults and which are better stipulated consist of format, variation of grids used, established colors and illustrations. Both from a technical analysis of the layout elements and from an aesthetic analysis, it can be observed how there has been a considerable evolution in the delimitation of elements within the digital version of the school text and, based on the results obtained from the children's surveys, it could be concluded that, due to their age and the era in which the world is increasingly emerging, they improve their learning with the use of digital texts.

### **CONCLUSIONS**

- Once the research was completed, it was possible to identify and analyze through the collection of information the qualities in the techniques used by the EDIPCENTRO publishing house in the production and distribution of its school textbooks in the subject matter of Language and Literature for fourth-grade children. The evolution took place after the change of study modality through the provision of their books by a friendly SOPHÍA platform.
- According to the pre-established, an analysis matrix was created in which each of the elements that make up the layout of a page was analyzed, including grid elements, typography, color, images, composition, hierarchy and format. With these cards, it was possible to observe and categorize the most characteristic features of the layout of the publishing house in its two versions of the presentation of school textbooks: printed and digital.
- The proposed matrices made it possible to determine through general conclusions the similarities and differences of the texts, as well as their changes over the years and the educational modality. On the other hand, the surveys developed allowed to know how, from a perspective far from the designer and layout designer, the receivers of the books (students, parents and teachers) consider the layout factor important when acquiring a school textbook. The graphic level of school textbooks in Language and Literature was identified and how it influences their acquisition.
- In conclusion, the hypothesis put forward at the beginning of the research shows the relationship that exists between the diagramming techniques used in a school textbook and the incidence of purchase, which were presented through the tabulation of data from the surveys conducted, showing and proving throughout the research that part of these techniques used in EDIPCENTRO have and will continue to influence the purchase of its copies.

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