

INDIGENOUS LANGUAGES IN THE INFOGRAPHICS OF MEXICAN GOVERNMENT OFFICIAL SITES (2022-2024)

Las lenguas indígenas en las infografías en sitios oficiales del gobierno de México (2022-2024)

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ABSTRACT

Keywords:

indigenous languages,
infographics, social
communication, promotion

The 2018-2024 Government Mexican administration has implemented a communication strategy that involves infographics as a visual support - analog and digital - for the dissemination and prevention by and for the indigenous peoples of Mexico. The advantages of this communicative element have been recognized. To characterize infographics in indigenous languages to convey messages as part of the Social Communication of Mexican government agencies and educational institutions. A quantitative, descriptive, longitudinal, and non-experimental research design was used. The sample comprised 82 infographics published by the Government of Mexico, state governments, and some educational institutions on social networks and official websites. The infographics from the last two years of the current administration were analyzed. Content analysis was implemented, and a digital observation guide, consisting of 20 items, was built for information retrieval and used as a research instrument. Results. It was observed that infographics have been published in the 68 indigenous languages spoken in Mexico. On average, an infographic is translated into at least five indigenous languages, and 45% were translated into the native languages of their respective regions. Additionally, 55% of the infographics focused on SARS-CoV-2, making this the most recurring topic. The government and educational organizations must continue using the various Indigenous languages to inform inhabitants who still practice them, especially in formats as accessible to the population as visual aids such as infographics.

RESUMEN

Palabras clave:

lenguas indígenas, infografía,
comunicación social, promoción.

La administración gubernamental mexicana 2018-2024 ha implementado una estrategia de comunicación que involucra las infografías como soporte visual -analógico y digital- para la difusión y

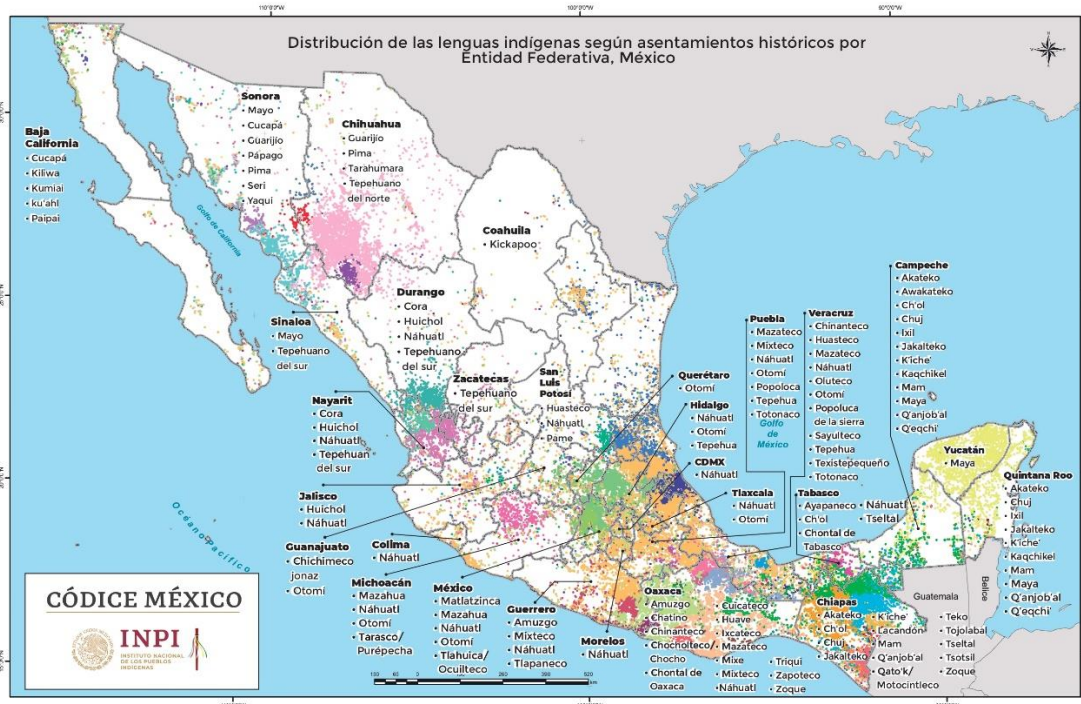
prevención por y para los pueblos indígenas de México, reconociéndose las ventajas de este elemento comunicativo. El objetivo del estudio es caracterizar las infografías en lenguas indígenas para transmitir mensajes como parte de la Comunicación Social de dependencias gubernamentales e instituciones educativas mexicanas. Para ello, se utilizó un diseño de investigación de tipo cuantitativo, descriptivo, longitudinal y no experimental. La muestra estuvo conformada por 82 infografías publicadas por el Gobierno de México, gobiernos estatales y algunas instituciones educativas en redes sociales y sitios web oficiales. Se analizaron las infografías de los últimos dos años de la actual administración. Se implementó un análisis de contenido y se construyó una guía de observación digital, conformada por 20 ítems, para la recuperación de la información y se utilizó como instrumento de investigación. Se observó que se han publicado infografías en las 68 lenguas indígenas que se hablan en México. En promedio, una infografía está traducida a por lo menos cinco lenguas indígenas, y 45% fueron traducidas a las lenguas originarias de sus respectivas regiones. Además, el 55% de las infografías se centraron en el SARS-CoV-2, convirtiéndolo en el tema más recurrente. Las conclusiones apuntan a que el gobierno y las organizaciones educativas deben continuar utilizando las diversas lenguas indígenas para informar a los habitantes que aún las practican, especialmente en formatos tan accesibles para la población como las ayudas visuales como las infografías.

Introduction

The history that precedes us, the human beings currently present in this social and global context, comprises a melting pot of customs and traditions that give us identity and a sense of belonging to the culture from which we come. Indigenous languages in Mexico play a crucial role in this, as they describe how our ancestors communicated in the past, preserving our history and connecting us to our roots. These languages have become a means to dialogue, inherit, and practice different social, moral, and ethical norms in specific communities (Degawan, 2019).

Governments and institutions must meet the information needs of communities that speak an indigenous language, even though they do not represent the majority. In this sense, the use of communication media, such as infographics, is required, which facilitates the communication process of transcendental information for their safety and well-being. At a global level, February 21 has been celebrated as "International Mother Language Day" since 1999. In Mexico, 68 indigenous languages are present throughout the republic; these are divided into 11 "linguistic families," from these, approximately 364 variables of 68 different groupings are decanted. (Secretariat of Culture, 2018). The language families have been grouped according to their historical origin and structural and lexical similarities. The language families are Algic, Uto-Nahuatl, Cochimi-Yumana, Seri, Oto-Mangue, Mayan, Totonac-Tepehua, Tarascan, Mixe-Zoque, Chontal of Oaxaca and Huave. The most widely spoken language is Nahuatl, which has 1.725 million speakers; Mayan, which has 859 thousand speakers; and Tzeltal, which has 556 thousand speakers. Figure 1 shows the different languages and their geographic distribution.

Figure 1
Distribution of indigenous languages in Mexican territory



Note. Instituto Nacional de los Pueblos Indígenas (2010).

From north to south and from east to west, throughout the Mexican Republic, the various languages that are different from Spanish show a diversity and cultural diversity

in each region of our country. This fact is so essential that the United Nations General Assembly ruled that 2022 and 2023 would be called the "International Decade of the World's Indigenous Languages" to achieve reflection, awareness, and feedback on those nuances that prevent any mother tongue from its free expression. Through its various initiatives, the United Nations plays a crucial role in promoting and preserving indigenous languages, providing reassurance and confidence in the global efforts to protect linguistic diversity (United Nations Educational, Scientific and Cultural Organization, 2022).

According to the Censo de Población y Vivienda 2020, in Mexico, it was recorded that approximately 7 million 364 thousand 645 people –over 3 years of age– speak a language other than Spanish. It is estimated that out of every 100 people who speak an indigenous language, 12 do not speak Spanish; it was also identified that of this total, a significant 51.4% are women, who play a crucial role in preserving our indigenous languages, and 48.6% are men. In 2022, 23.2 million people were registered who identified themselves as "Indigenous," of this number, approximately 7.1 million, 30.8% confirmed speaking at least one indigenous language. Therefore, 8.1% of households in Mexico speak one of the 68 native languages of this country (Instituto Nacional de Estadística Geografía e Informática, 2022). In addition, it should be mentioned that in Mexico, its legislation recognizes the existence of indigenous languages, which can be used within a particular territorial space, unlike Spanish, which is spoken throughout the Mexican territory (Zajícová, 2017).

Given the segregation directed at the indigenous-speaking population, voices have been raised for the importance and presence that should be given to this sector in Mexico and in the world. In a proactive response from government institutions, during the term of the former Mexican president Andres Manuel López Obrador (2018-2024), a communication strategy was applied that was directed to all Mexicans, placing special emphasis on the communities of indigenous peoples. These changes were manifested, in the first instance, through the Social Communication policies that the Mexican presidency itself would begin to implement:

Article 9.- Social communication or promotion and advertising messages and campaigns (...) that are disseminated in indigenous towns and communities, recognized by Article 2 of the Political Constitution of the United Mexican States, will seek to include versions in the ethnic language or languages in question, by the type of campaign and its target population (ACUERDO por el que se establece la Política de Comunicación Social del Gobierno Federal, 2019).

It must be assumed that communication is a process that involves a flow of interaction and dissemination of information of any kind between one, two, or more people. In this process, there are channels where this dialogue occurs harmoniously, through codes that provide a context between the participants and constant feedback that reaffirms the reliability in which the communicated message was issued and received, that is, an entire environment dedicated to communicating to two or more individuals is created (Otero, 2019). Communication involves various disciplines and schools of thought since it is present in every daily and private environment of human beings, playing a significant role in shaping public and private spaces. However, there has always been a clear distinction or limit between its use with a social (critical) and capitalist (mass control) approach. Communication can be used to persuade (social) and manipulate (functionalist); one can be a consequence of the other or only be related to different processes in public, private, and intimate spaces.

To get a better idea of this kind of communication process, Harold D. Lasswell, in his study and understanding of legal and political-strategic processes, realized the necessity of developing a “basic” model that could contribute to the creation of a context for certain academic, journalistic, social, and institutional situations within the public or private spaces of a United State immersed in studies of the effects of political propaganda due to the presence of World War 1 (Fernández, 2010).

According to Lasswell, the pioneering of political science of the 50’s and 60s, the necessary parameters to formulate the narrative of a journalistic “news story” (Herrera, Campi & Fariño, 2010) or any other event were based on asking the questions: “Who?”, “What?”. “How?”, “To whom?” and “With what effect?”. This allows the analysis of bilateral and multilateral exchange between one or several “Senders” and “Receivers” who share the same channel through disseminating knowledge with a logical order and a clear interaction of all the parts. Whether to persuade or manipulate the masses coming from alterity or alienations.

This communication model is based on Lasswell’s experience in public policy, legal, and military strategies within the historical and geopolitical context of the time this politologist was active. These previously mentioned questions are based on decision-making with a stable reasoning framework, which should have a logical and analytical sequence (Duarte, Augusto & Lúcia, 2021). Harold Dwight Lasswell sought to clearly weigh what occurs in each phase of the communication process and how this model can be applied to different cultural and social contexts, which can be expressed through journalistic news, posters, and, therefore, infographics.

For this reason, Social Communication —which is the communication that governments do—, applied at the governmental level, must be oriented towards disseminating information in an honest, partial, and transparent manner to the population. This is reflected in the Official Gazette:

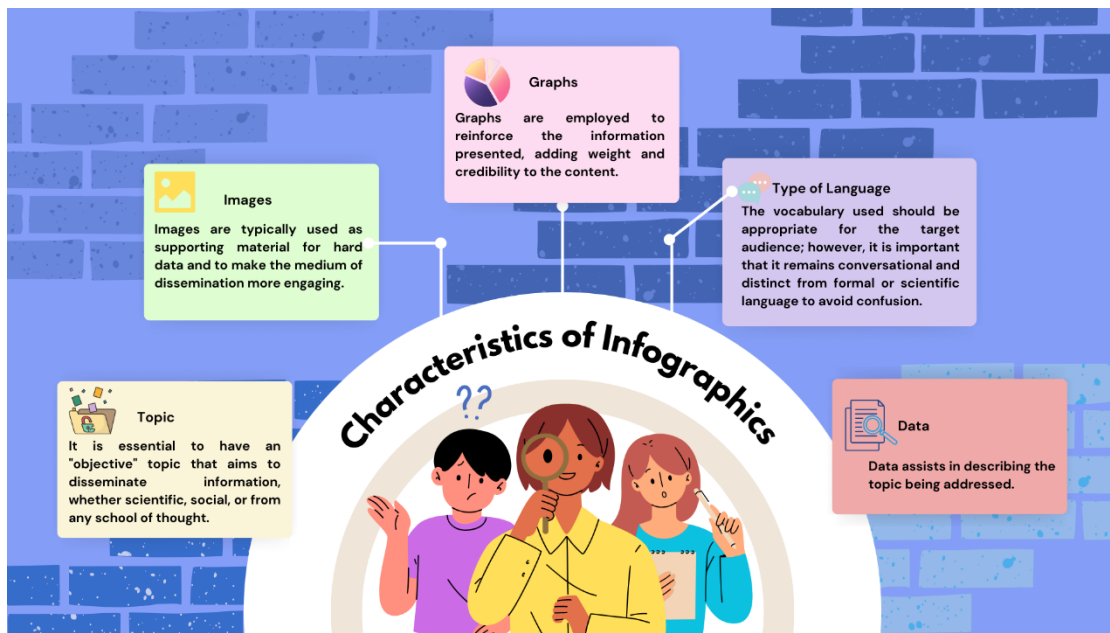
Article 134 of the Constitución Política de los Estados Unidos Mexicanos, in its eighth paragraph, establishes that propaganda, under any form of social communication, disseminated by public powers, autonomous bodies, agencies, and entities of the public administration and any other entity of the three levels of government, must be of an institutional nature and have informative, educational or social orientation purposes. This propaganda will not include names, images, voices, or symbols that imply personalized promotion of any public servant. (ACUERDO por el que se establece la Política de Comunicación Social del Gobierno Federal, 2019).

One of the main pillars of Social Communication is the diverse and dignified dialogue —which is not constituted by hierarchies and social prejudices, which occurs in a horizontal environment— between one, two, or more groups to solve problems through social intervention projects —campaigns, workshops, conferences, studies, among others— that as a purpose at the community level, specific objectives and goals are met to resolve conflicts and discontents that do not allow social harmony (Gumucio, 2006). Now, this has benefited from the increase in infrastructure and installation of a shared Wi-Fi network at the national level, called “Internet para todos” —Internet for All—, a promising initiative that seeks to provide access to all Mexican citizens to the mobile phone network and the Internet —through fiber optic or satellite technology— to bring to a larger population the benefits of the social welfare programs that were created during the presidential period of López Obrador (Coordinación Nacional de Estrategia Digital, 2021). It should be noted that accessibility also involved providing free wireless internet

at more than 100,000 points across the 32 federal entities (Comisión Federal de Electricidad, 2024).

In this way, the Communication carried out by the Mexican state has also been situated in digital spaces. The interaction with new technologies and platforms involving web 2.0, 3.0, and 4.0, information technologies use, and artificial intelligence has favored a new dissemination environment. However, this also generated a challenge in the creation of content for citizens in digital media, such as posters, brochures, or infographics, which are considered highly accessible units of information for any citizen with a low-medium level of literacy —review Figure 2 to delve deeper into the characteristics of this medium—. It is crucial to emphasize the importance of considering diversity in digital content dissemination to make the audience feel included and valued; that is why forms of content creation and dissemination like “infographics” are still used to share information in México, for the diverse way of living in this country. The dissemination of content that informs all citizens, considering their diversity, becomes even more crucial, primarily if digital collaborative spaces are being implemented for activism in favor of Indigenous peoples and their languages (Cru, 2024).

Figure 2
Characteristics of Infographics proposed by some authors



Note. Rivera Salas & Hernández-Ferral (2022) based on Valderruten (2021), Sidorenko-Bautista et al., (2021), Carbonell-Alcocer & Martín Carnerero (2021) & Vilaplana Camús (2019).

The use of visual resources, such as infographics, in Communication has been increasing. During the COVID-19 pandemic, this visual support was used to provide more timely information about this virus in different scenarios. For example, the governments of Latin American countries made use of infographics during this period, as noted by Moyano and Mendivil (2021), who analyzed more than 500 pieces of this type, along with other visual resources, issued by 47 countries, about SARS-CoV. This study underscores the crucial role of infographics in combating the false information that spreads around the health contingency. In the case of Mexico, the space “Todo sobre COVID-19” was created, which included, among other resources, infographics in several of the native languages about this disease (Rivera Salas, 2020).

Also, within the framework of Government Communication, González-Conde et al. (2024) identified that, in the state of Puebla, Mexico, there is a significant deficit of information issued by the government on organ donation and transplantation and that myths were intensified due to the pandemic. As healthcare professionals, policymakers, and researchers, your role is crucial in addressing this deficit. To counteract this situation, in their research, they proposed to translate a document into three Indigenous languages that break down the myths and realities of this topic aimed at the Indigenous population. These authors conclude that it is essential to respect the right of this sector of the population to receive information on health issues from government entities.

The use of infographics to disseminate content in indigenous languages has been limited and applied in some fields. However, these projects are not solitary endeavors. Almazán Terán (2022) has implemented them to make known basic concepts in the field of marine biology in the Virtual Marine Laboratory project, allowing them to socialize information for all audiences in six native languages of Mexico –Nahuatl, Mayan, Zapotec, Mixtec, Tzeltal, and Tsotsil–, based on the breakdown of 18 terms related to marine sciences. Juárez Picado et al. (2022) carried out a similar exercise, developing an infographic to make known the meaning of the most used indigenous terms in daily life in indigenous peoples of Nicaragua. Also, Cárdenas (2021) mentions the ease of using this tool, which students of Indigenous Education designed to provide data to non-Spanish speakers on health situations.

Exercises have been carried out to preserve indigenous languages through infographics. Ojideji et al. (2023) created and applied infographics to promote the use of Yoruba among secondary school students. Their resource not only increased student interest in the language but also played a significant role in preserving the cultural and linguistic heritage of the Yoruba language. The authors conclude that infographics are a powerful tool for this preservation.

However, as Galindo (2023) points out, even in society, the academic community, and governments, there are yet to be fully known indicators of the risk-vitality of indigenous languages. This would have a timelier impact on their promotion. In light of this, he proposes a typology of scales for measuring the risk-vitality of languages, the factors for maintaining and promoting languages, and the planning of revitalization processes. Significantly, the author highlights the transformative role of innovations and technology in developing materials that facilitate language learning and dissemination, offering a hopeful outlook for language revitalization. Moreover, this author underlines the importance of adapting these scales to each language spoken in each country.

Additionally, Castro Mediavilla (2024) calculated through an evaluation model of publications on social networks according to the language used; in Ecuador, the government addressed less than 2% of the messages to indigenous peoples in their language, highlighting the urgent need for more inclusive communication. Similarly, Conde-Ferrández et al. (2022) mention that it is necessary to produce visual resources for the indigenous population and bring them closer to it. In their fieldwork with Mayan speakers, they specify the significance of contextualizing the messages so that the recipients, based on their own culture, understand the content of infographics or posters on health care. In this case, they seek to generate genuine interest in the communities because the information they provide, having a governmental character, dictates or seeks to warn these people of direct, indirect, adverse, and non-adverse situations.

Given this context, where an order can be established in creating an infographic through its characteristics, the following questions arise: What characterizes infographics in indigenous languages that transmit messages as part of the Social Communication of government agencies and educational institutions? What elements of infographic

structure are most recurrent in published infographics? In which native languages are messages in native languages spread? What are the messages that were massively socialized through these information units? These questions hold practical implications for our understanding and use of indigenous languages in communication, particularly in the context of government and educational institutions.

Method

Objectives

Main objective.

To characterize infographics in indigenous languages to transmit messages as part of the Social Communication of Mexican government agencies and educational institutions.

Specific objectives.

1. Delimit the elements of the infographic structure that are most recurrent in the sample.
2. Identify the native languages in which messages in native languages are spread.
3. Describe the messages that were massively socialized through these information units.

Design

This research used a quantitative, descriptive, non-experimental, and retrospective approach. This design was chosen to highlight the main characteristics shown by the infographics that the federal and eight state governments of the Mexican Republic and educational institutions have been publishing as part of their Social Communication. The focus on these infographics is pertinent due to their role in shaping public perception and understanding a part of the presidential administration from 2022 to 2024.

Sample

First, all the official electronic sites of the Government of Mexico (2018-2024) and the 32 federal entities were reviewed to specify the sample. It was sought that infographics had been published that provided information about the government in any of the 68 native languages spoken in Mexico. In this way, 11 higher education institutions, eight state government sites, and two from the government of Mexico were located, and infographics were published in indigenous languages. In this first search, 143 pieces were found. Subsequently, it was checked that the infographics were not duplicated on some of the sites; If so, those that appeared repeated were discarded. This way, the sample comprises 99 infographics on all these sites included in this study. Publications in other electronic spaces, such as social networks or microblogging, were not considered since many of these pieces were first published on the Mexican state's official sites.

Technic and instrument

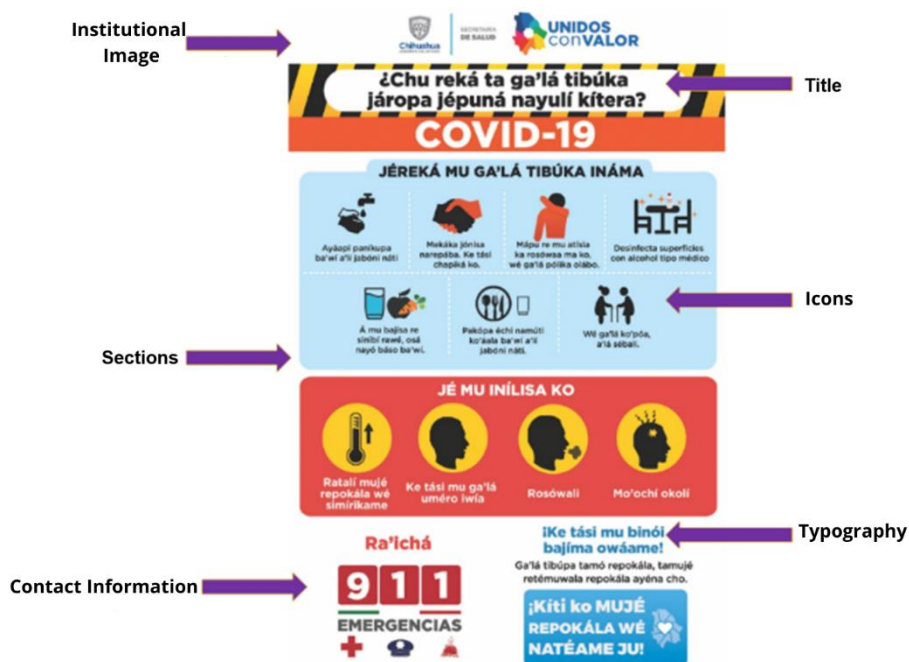
The research technique used was content analysis since the elements included in the communication piece and its messages were assessed. As a research instrument, a digital observation guide was built to recover information, comprised of 20 items based on the variables of interest: Social Communication and the Use of Indigenous languages in infographics. This instrument was previously piloted in two phases: 1) In the first stage, it was subjected to an assessment by eight experts to delimit the number of items and their relevance, taking into account the objectives of the research through the application of the Content Validity Index; 2) In the second stage, an observation was carried out with

the adjusted guide, so two observers analyzed the same communication pieces to verify that they had obtained the same assessments. Taking the Holsti index as a reference, once more than 90% of agreement was achieved between the observers' assessment of the infographics, the instrument was considered fully piloted and ready for use.

Procedure

The procedure consisted of retrieving information in one go during the second quarter of 2024. The data collected was processed after being downloaded from the digital observation guide in an Excel matrix with the proposed items. These data were given a descriptive statistical treatment to be presented graphically. Each object of study was assessed based on its tangible elements. Figure 3 shows some of the aspects that were considered for said observation.

Figure 3
Elements observed in the infographics

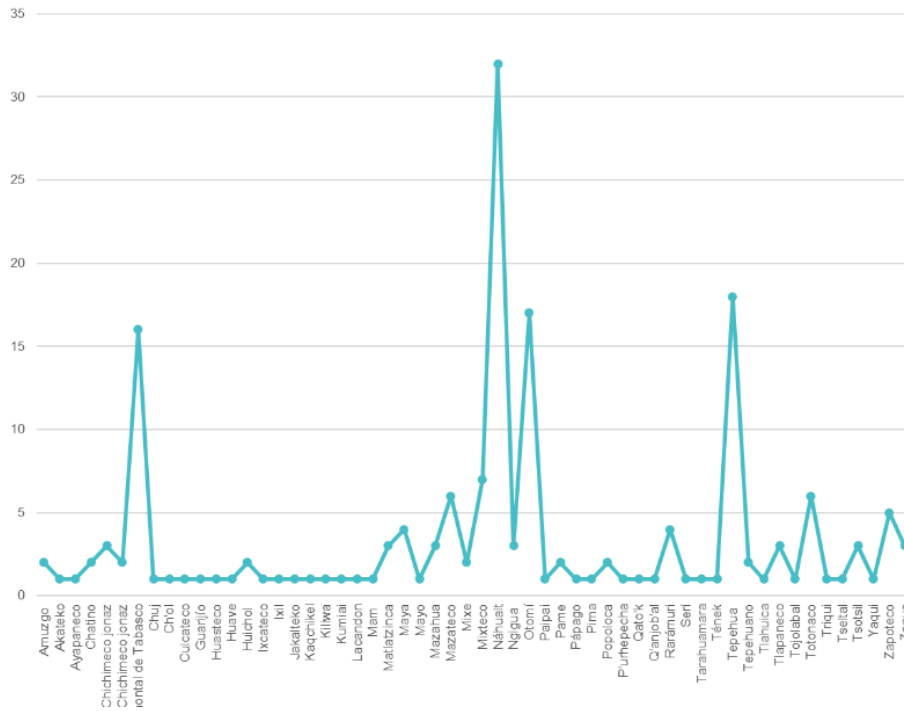


Note. Rivera Salas & Hernández-Ferral (2024).

Results

In the sample recovered it was identified that infographics were published in 56 of the 68 Indigenous languages spoken in the Mexican Republic, thus covering around 85% of the entire national spectrum. It was also detected that, on average, each infographic was translated into five different Indigenous languages to bring the same information provided in Spanish closer. In addition to Nahuatl, the most recurrent languages were Tepehua, Otomi, Mixtec, Mazatec, Totonac, and Zapotec. The frequency of use of each of these languages appears in Figure 4.

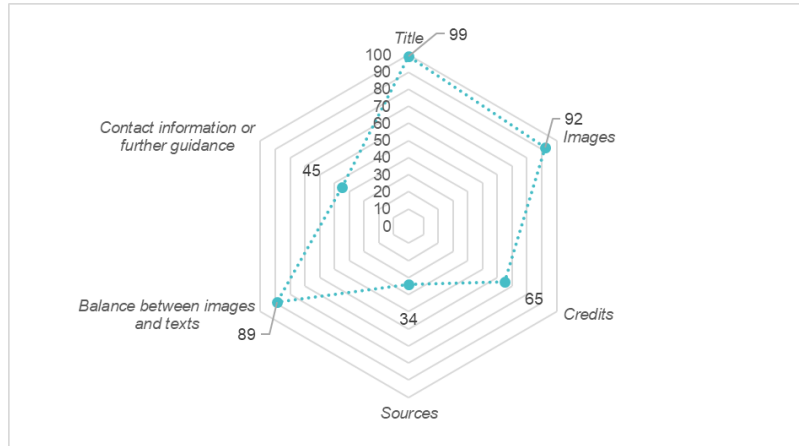
Figure 4
Indigenous languages are identified in the infographics.



Note. Rivera Salas & Hernández-Ferral (2024)

As for the elements that make up the infographic structure, most of them meet the minimum requirements of having a title, images, and the appropriate balance between iconography and typography. It should be noted that in 100% of infographics, the pictures and icons are simple and easy to understand. Some elements that are less frequently seen are the sources of information that support the data presented (34%), credit for who made the design (66%), and contact information to receive support or more information (45%). Additionally, only 34% have sources of information, which can lead to questioning the integrity of the information they include. It is essential to point out that the presentation of some infographics differed depending on the language in which they were written; however, some infographics talked about the same topic in Spanish, but the presentation in indigenous languages was more straightforward. This measurement is concentrated in Figure 5.

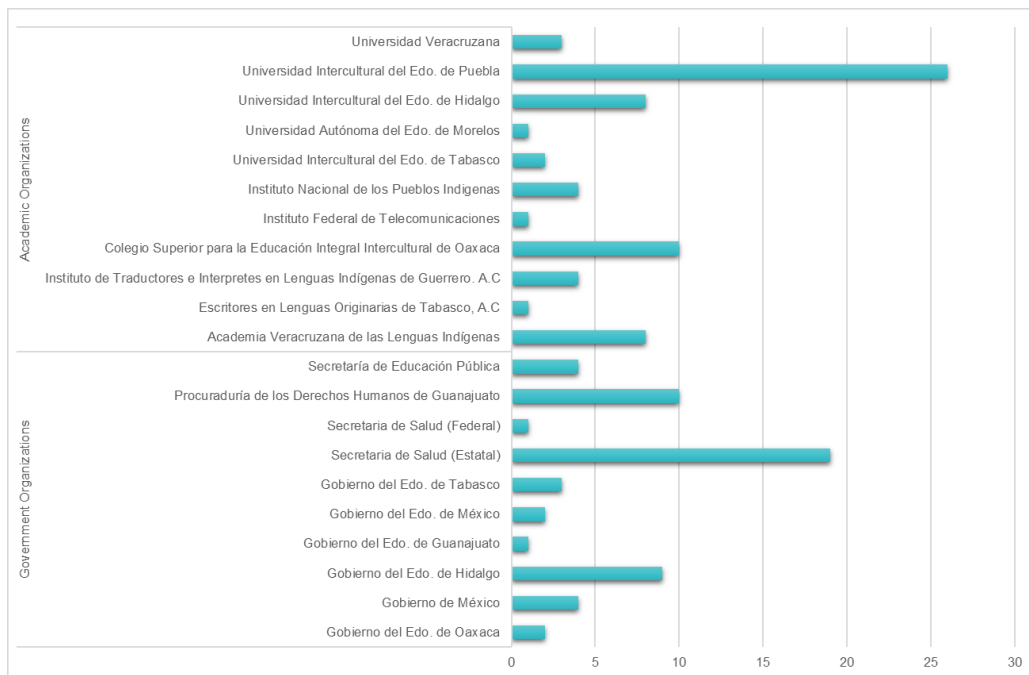
Figure 5
General evaluation of the structure of infographics.



Note. Rivera Salas & Hernández-Ferral (2024)

As for the issuers, it was found that 45% of the federal entities shared infographics written in Indigenous languages spoken in the territorial space covered by their state. Likewise, the educational institutions identified are linked to indigenous communities or are in towns where some native language is still used —see Figure 6 for more information—.

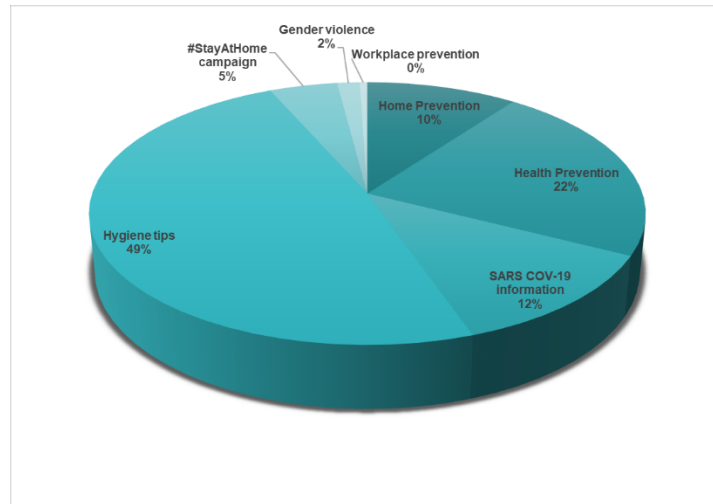
Figure 6
Organizations that are the authors and issuers of the infographics included in the exhibition



Note. Rivera Salas & Hernández-Ferral (2024)

A more significant number of infographics (55%) also deal with the pandemic, which is the most recurrent topic. However, other issues have been addressed, such as occupational safety, hygiene in the home and workplace, and the prevention of gender violence. These topics are presented in Figure 7.

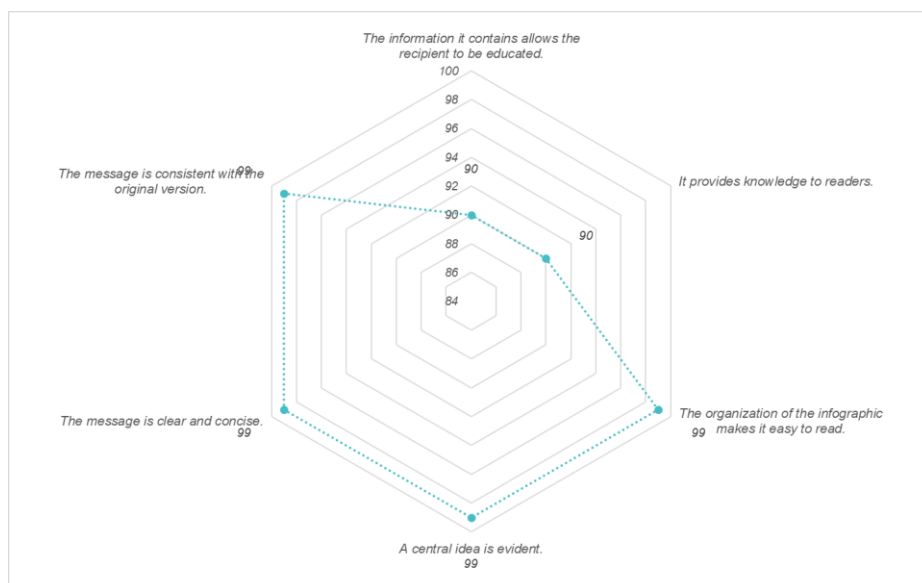
Figure 7
Themes identified in the messages of the infographics that make up the exhibition



Note. Rivera Salas & Hernández-Ferral (2024)

Finally, the messages that the recovered infographics convey were observed. The information units generally included data organized to be easily read by the recipient, starting from a central idea. The messages were informative and educational (90%) while clear and concise (100%). It is noteworthy that, in essence, the content of the messages coincides with what was published in the version that was published in Spanish —see Figure 7 for more information—.

Figure 7
Characteristics of the messages observed in the infographics.



Note. Rivera Salas & Hernández-Ferral (2024)

Discussion and conclusions

According to Harold D. Lasswell, it is established that social processes must consider two categories for this process to “be,” to this day, these are characteristics that must be considered to create scientific, journalistic, political, or any other type of content worldwide. These categories are “material” and “ideological” knowledge (Lasswell, 1959). This is because the cultural and ideological presence of each person, group, community, region, or nation has helped to create a message. In other words, the “material” aspect must have connotations linked to the ideology of the people who, in a certain sense, will consume either a product or a service. Moragas (1985) comments that depending on the perspective that an analysis is given, the conclusion could change; that is, if an academic or journalist looks forward to studying the function of the “Sender” from the perspective of comprehending the answer of “Who?” made the action in any context, the narrative will modify, it happens if in the same way we focus our interest in analyzing the answer of the question on the content that was expressed (“What?”) in the message through the dissemination channel. Based on this principle mentioned by Lasswell, the infographics analyzed in this text were revised considering these categories for the material and ideological context that they were made, just for the Indigenous communities that received information about SARS-CoV-19 during the pandemic through social communication studies.

Social Communication seeks to resolve social problems through dialogue between people from different spheres and institutions, intending that the flow of information is organic and not prone to conflict and involves a series of signals that promote the formation and conservation of communities. It also recognizes that the relationship between leaders and citizens is strengthened as long as the latter acknowledges the population's demands through different media (Gumucio, 2006). On the other hand, from a functionalist perspective, there are some needs that the media must meet. In the case of the infographics observed, it was identified that cognitive needs are covered, that is, the acquisition and reinforcement of audience knowledge on specific topics in specific contexts (López-Rúa & Martínez Navarro, 2014; Palmucci, 2017; Rodríguez Roura et al., 2018). Additionally, the pieces observed denote the use of visual resources, which facilitate understanding the central idea linked to an image. By combining both resources – typography and image – the receiver can decode the message and associate it with a meaning, which enables him to understand other information (Morera Vidal, 2017).

At the same time, integrating social and personality factors in health communication is crucial. The work significantly contributes to increasing security regarding managing social and health problems. The use of the native language in health and social communication not only enhances community belonging but also addresses the needs of underserved populations, particularly those that have been poorly served or have suffered from discrimination (Tamayo & Rincón, 2017; González Calderón, 2022).

As part of social communication, mass communication establishes the dissemination of information with the help of technical means to a dispersed large audience (Deuze, 2021). In this sense, it can be observed that the infographics analyzed have different types of recipients who are distributed in other parts of the national territory, which makes it necessary to apply this type of communication to bring the message closer to these recipients in a particular way (Huang et al., 2019; Chan et al., 2020). Although this type of communication tends to be unilateral and public, the source

of information must be an organization with high credibility. This ensures that the audience can trust the information they receive and feel secure in communication.

Thus, the infographic must cover the minimum characteristics of its structure to fulfill the role of the outstanding issuer and provide the necessary data for the receiver to decode the idea correctly, in addition to being by the customs, traditions, and cultural work of each native person, so that it is to their liking and consumption. In the infographics analyzed, adequate visual resources and the use of Mexican languages that bring the message closer to the reader are appreciated. However, some areas of opportunity, such as the foundation of the information and alternative channels to establish an interaction between the receiver and the issuer, are not appreciated in most of the pieces observed (Li et al., 2018). When faced with a mass communication strategy, it is imperative to cover the most significant number of requirements of the structure of the communicative piece to increase its effectiveness, that is, of an infographic. However, within the context of the research object and to evaluate the effectiveness of the infographic, it is necessary to generate an instrument - whether a survey or semi-structured interviews - for Indigenous peoples to know how it can impact and persuade positively; for example, as with the case of biological and health issues such as what happened with SARS-COV-19. Considering the cultural context when developing communication strategies for Indigenous communities is crucial. Although it is understood that this has not been applied during this pandemic due to the restrictions and quarantine established, it is essential to note that social communication in indigenous languages about contingency plans should be considered as an everyday practice.

Other aspects that the authors consider essential to point out is that based on the Statistics on the occasion of the International Day of Indigenous Peoples carried out by INEGI (2022), it was established that the population coming from Indigenous people aged 15 years or older has a level of schooling equivalent to having completed primary school —this record varying between men and women who speak an indigenous language (Instituto Nacional de Estadística Geografía e Informática, 2022). This can be considered both an area of opportunity and a disadvantage when creating this type of information dissemination content, which, however, does not lessen the effort of the infographics that were disseminated at the time, but which in future scenarios should be adapted to the level of schooling and social context in which specific topics and information are sought to be disseminated. Since each community has a different way of establishing and interacting with information, not only should a general plan be implemented, but to have a real impact and incidence, designing a different plan or logistics for each recipient and native community is vital.

The role played by the sender is very significant in any communicative act since he is the one who chooses and selects the signs to transmit the message; that is, he is the one who defines the code, or the system of signs and symbols, that will be used to connect with the receiver (Quintero et al., 2020). The results show that many of the country's native languages have been implemented as part of the code chosen to deliver institutional information to these communities. This choice is relevant because the intention of proximity to citizens with different characteristics due to their traditions and culture is evident (Rivera et al., 2020; Di Genová, 2021). However, it is striking that those who construct and socialize the messages are government-type institutions or academic institutions linked to indigenous populations. In the country, many people still speak an indigenous language, are immersed in Spanish-speaking educational systems, and do not necessarily receive information in their mother tongue. It is, therefore, necessary to continue with a policy of constructing communicative pieces in different Mexican

languages to influence audiences who are also immersed in educational institutions where Spanish is spoken.

At the same time, the message has been duly translated into the different languages implemented without losing the original idea of the text proposed in the Spanish version. This reinforces the idea of sending homogeneous information with the same meaning to the entire population, thereby reducing the possible asymmetries derived from messages constructed differently (Moyano & Lay Mendivil, 2021). It is also significant that the data presented is synthetic and has an educational and informative character, which helps in empowering the population concerning the needs of their environment. Furthermore, the regulations on the management of information imposed by the Mexican state are diligently adhered to, providing a sense of reassurance and confidence (Binimelis-Espinoza, 2017; Diario Oficial de la Federación, 2022).

As communication support, the infographics observed were predominantly placed on digital platforms via the Internet. Many were shared in shopping malls and public spaces where indigenous languages are spoken. It is crucial to put these communicative elements in relevant media or channels so that users of these languages can access them, fostering a two-way communication process. The choice of infographics as a communication support is significant, as Pinto Rodríguez (2020) highlights, as they are a medium that, through images, plays a vital role in documenting and revitalizing Indigenous languages.

This research has examined how institutions implement infographics. Given that only a few elements of the communication process have been identified, it is recommended that future research focuses on understanding the issuer's perception of infographic design and the clarity of the messages being communicated. Additionally, it is important to identify other topics that this demographic may need more information about and alternative formats they might be interested in accessing as part of the information provided by the government. Regarding the issuers, assessments should be conducted within agencies to help those involved in social communication recognize their level of knowledge and the cultural context in which they operate. This understanding is crucial for creating more effective messages for this population.

There are some things to emphasize. First, it should be noted that this research was limited to identifying how the elements of the communication process are presented in the infographics published by the Mexican government since this issuer performs social communication functions. Second, it is crucial to highlight the scarcity of government efforts and documented practices in preserving Indigenous languages, particularly in Communication. This scarcity underscores the issue's urgency and presents an opportunity to preserve culture and promote access to information for Indigenous peoples.

Finally, this research shows how important it is for government and educational organizations to continue using the different indigenous languages to inform the inhabitants who still practice them, both in infographic format and in any other format. Furthermore, it invites diversifying the types of content in formats that are as accessible to the population as the visual supports that represent infographics and that their consultation is simple, whether it is searched digitally or in person. Creativity and innovation applied to visual resources are undoubtedly an excellent tool for preserving the language.

References

- Almazán Terán, M. C. (2022). *Contenido educativo en seis lenguas originarias de México en el proyecto Laboratorio Marino Virtual* [Undergraduate Thesis, Universidad Autónoma Metropolitana]. <http://riul.unanleon.edu.ni:8080/jspui/bitstream/123456789/9471/1/250679.pdf>
- Arteaga, A. (2019). El Uso de la Infografía y su influencia en la comprensión de lectura en los estudiantes de la escuela "Gran Colombia". [Undergraduate Thesis, Universidad Técnica de Babahoyo]. <http://dspace.utb.edu.ec/handle/49000/8130>
- Binimelis-Espinoza, H. (2017). Gobierno electrónico como tecnología de inclusión social. *Reflexiones desde el Trabajo Social. Katálysis*, 20(3), 448-457. <https://doi.org/10.1590/1982-02592017v20n3p448>
- Chan, A. K. M., Nickson, C. P., Rudolph, J. W., Lee, A., & Joynt, G. M. (2020). Social media for rapid knowledge dissemination: early experience from the COVID-19 pandemic. *Anaesthesia*, 75(12), 1579–1582. <https://doi.org/10.1111/anae.15057>
- Castro Mediavilla, E. M. (2024). *Comunicación institucional y plurilingüismo en el Ecuador. Estudio de las lenguas ancestrales como soporte vehicular de la comunicación de Gobierno* [Undergraduate Thesis, Universidade de Santiago de Compostela]. <https://investigacion.usc.es/documentos/65e61ec7ccb1f91ed4e4b8c7?lang=es>
- Carbonell-Alcocer, A., & Martín-Carnerero, C. (2021). Infografías, imágenes y animaciones para una comunicación científica eficiente. *Ciberimaginario*, 173-196. <https://cutt.ly/v0ou9Z2>
- Cárdenas, E. (2021). Trabajo docente en la licenciatura en educación indígena en tiempos de pandemia: Relato de una experiencia. *RevistAleph*, 36, 154-176. <https://doi.org/10.22409/revistaleph.vi36.4891>
- Comisión Federal de Electricidad (2024). *Internet fijo gratuito*. <https://internetparatodos.cfe.mx/cfe-teit-servicios/internet-fijo-gratuito/>
- Conde-Ferrández, L., Andueza Pech, M. G., Gómez Carballo, J. G., Kantún Moreno, N., & González-Losa, M. del R. (2022). Comunicaciones de salud dirigidas a los mayas de la península de Yucatán (México) en el marco de la pandemia COVID-19. *Revista Española de Comunicación en Salud*, 13(1), 69-77. <https://doi.org/10.20318/recs.2022.6099>
- Coordinación Nacional de Estrategia Digital. (2021). Internet Para Todos. *Gobierno de México*. <https://www.gob.mx/cedn>
- Cru, J., (2024). Activismo digital en lenguas indígenas. Posibilidades y retos para la revitalización lingüística en la península de Yucatán. *Living Languages*, 3(1), 112–129. <https://doi.org/10.7275/livinglanguages.2002>
- Degawan, M. (2019). Lenguas indígenas, conocimientos y esperanza. *UNESCO*. <https://es.unesco.org/courier/2019-1/lenguas-indigenas-conocimientos-y-esperanza>
- Deuze, M. (2021). A review of the ‘grand narrative’ of media and mass communication theory and research. *Profesional de la información*, 30(1), e300105. <https://doi.org/10.3145/epi.2021.ene.05>
- Di Genová, A. E. (2021). *Naturaleza y función de la Comunicación de masas*. <https://www.infosol.com.mx/miespacio/naturaleza-y-funcion-de-la-comunicacion-de-masas/>
- Diario Oficial de la Federación. (2019) *ACUERDO por el que se establece la Política de Comunicación Social del Gobierno Federal*.

- https://dof.gob.mx/nota_detalle.php?codigo=5558048&fecha=17/04/2019#gsc.tab=0
- Diario Oficial de la Federación. (2022). *ACUERDO por el que se establecen los Lineamientos Generales para el registro y autorización de las Estrategias y Programas de Comunicación Social y de Promoción y Publicidad de las dependencias y entidades de la Administración Pública Federal para el ejercicio fiscal 2022*. https://www.dof.gob.mx/nota_detalle.php?codigo=5640705&fecha=14/01/2022#gsc.tab=0
- Fernández Fernández, M. (2010). Tradición y estudios actuales de sociología de la comunicación. Barataria. *Revista Castellano-Manchega de Ciencias Sociales*, 11, 139-157. <https://www.redalyc.org/pdf/3221/322127621008.pdf>
- Galindo, J. F. (2023). Tipología y función de las escalas de evaluación del riesgo, vitalidad y programas de revitalización de lenguas indígenas". *Revista Dialógica Intercultural*, 1, 1-33. <https://doi.org/10.5281/zenodo.7893534>
- González Calderón, D. E. (2022). Aportes al pensamiento de diseño como estrategia preventiva a la discriminación. En A. M. Reyes Fabela (Coord.), *Diseño y desarrollo sostenible en el siglo XXI* (pp. 75-94). Universidad Autónoma del Estado de México.
- González-Conde, O., Barrientos-Núñez, M. E., Hernández-Rivera, J. CH. (2024). Traducción a tres lenguas indígenas de información indispensable sobre el tema de donación de órganos y tejidos en el estado de Puebla. *Revista Mexicana de Trasplantes*, 13(1), 15-22. <https://doi.org/10.35366/115305>.
- Gumucio, A. (2006). *Tiempo de milagros: tres retos de la comunicación para el cambio social. Sin Comunicación no hay Desarrollo*. Centro de Competencia en Comunicación para América Latina.
- Herrera Flores, A. E., Campi Maldonado, A. T., & Fariño Sánchez, N. D. (2021). El modelo de Harold Lasswell aplicado en comunicación digital. Caso: La Posta. The Harold Lasswell model applied in digital communication. Case: the post. <https://doi.org/10.5281/zenodo.5659997>
- Huang, G., Li, K., & Li, H. (2019). Show, Not Tell: The Contingency Role of Infographics Versus Text in the Differential Effects of Message Strategies on Optimistic Bias. *Science Communication*, 41(6), 732-760. <https://doi.org/10.1177/1075547019888659>
- Instituto Nacional de Estadística y Geografía. (2022). *Estadística a propósito del Día Internacional de los Pueblos Indígenas. Comunicado de Prensa Núm. 430/22*. https://www.inegi.org.mx/contenidos/saladeprensa/aproposito/2022/EAP_PueblosInd22.pdf
- Instituto Nacional de Lenguas Indígenas. (2022). Materiales en lenguas indígenas para prevenir el coronavirus COVID-19. *Estados de la República Mexicana*. https://site.inali.gob.mx/Micrositios/materiales_de_preencion_covid-19/estados.html
- Instituto Nacional de los Pueblos Indígenas. (2010). *Mapa Códice México INPI*. <https://es.scribd.com/document/702048483/Mapa-Codice-Mexico-Inpi>
- Juárez Picado, R. F., Ríos Martínez, E. A., y Hernández Hernández, D. A. (2022). Aportes léxico de las lenguas indígenas en el habla nicaragüense [Undergraduate Thesis]. Universidad Nacional de Nicaragua. <https://repositorio.xoc.uam.mx/jspui/retrieve/f474af48-bf6a-46d2-a5f9-65538a69357e/250341.pdf>
- Lasswell, H. D. (1959). The qualitative and the quantitative in political and legal analysis. *Daedalus*, 88(4), 633-645. <https://www.jstor.org/stable/20026533>

- Li, N., Brossard, D., Scheufele, D. A., Wilson, P. H. & Rose, K. M. (2018). Communicating data: interactive infographics, scientific data, and credibility. *JCOM Journal of Science Communication*, 17(02), A06. <https://doi.org/10.22323/2.17020206>
- López-Rua M. de G., & Martínez Navarro, G. (2014). Las funciones de los medios de comunicación en la vida de una persona mayor. *Revista de Comunicación de la SEECI*, XVII(35), 76-95. <http://dx.doi.org/10.15198/seeci.2014.35.76-95>
- Minervini, M. (2005). La infografía como recurso didáctico. *Revista Latina de Comunicación Social*, 8(59), 1-12. <https://www.redalyc.org/articulo.oa?id=819859066>
- Morera Vidal, F. J. (2017). *Aproximación a la infografía como comunicación efectiva* [PhD Thesis]. Universidad Autónoma de Barcelona, España. https://ddd.uab.cat/pub/tesis/2017/hdl_10803_457366/fjmv1de1.pdf
- Moragas Spá, M (1985). Harold D. Lasswell: Estructura y función de la comunicación en la sociedad. *Sociología de la comunicación de masas (Tomo II)*. <https://periodismo.uchile.cl/talleres/teoriacomunicacion/archivos/lasswell.pdf>
- Moyano, D., & Mendivil, L. L. (2021). Productos comunicacionales para la prevención de la COVID-19 promovidos por los gobiernos de América Latina y el Caribe. *Revista Panamericana Salud Pública*, 45, 1-10. <https://doi.org/10.26633/RPSP.2021.111>
- Oladeji, T. M., Adelana, O. P., & Atolagbe, O. D. (2023). Language preservation: The role of infographics. *JICTIE Journal of ICT in Education*, 10(2), 74–97. <https://doi.org/10.37134/jictie.vol10.2.5.2023>
- Otero, E. (2019). Paul K. Lazarsfeld y los inicios de la investigación en comunicación política. *Política. Revista de Ciencias Políticas*, 34, 149-169. <https://revistapolitica.uchile.cl/index.php/RP/article/view/55028/58034>
- Palmucci, D. (2017). Las infografías, nuevos espacios de lectura para el discurso científico-pedagógico. *Discurso & Sociedad*, 11(2), 262-288. [http://www.dissoc.org/ediciones/v11n02/DS11\(2\)Palmucci.pdf](http://www.dissoc.org/ediciones/v11n02/DS11(2)Palmucci.pdf)
- Pinto Rodríguez, L. (2020). Tecnologías de la Información y Comunicación para la revitalización cultural y lingüística. *Revista Exlibris*, 9, 64-74. <http://revistas.filo.uba.ar/index.php/exlibris/article/view/3335/2231>
- Quintero, M. J. C., de Esteban Curiel, J., & Antonovica, A. (2020). La comunicación persuasiva en política como elemento fundamental en el éxito de nuevas formaciones políticas en España: emisor, mensaje y contexto. Caso Podemos y Ciudadanos. *Estudios sobre el Mensaje Periodístico*, 26(1), 59-69. <https://dx.doi.org/10.5209/esmp.67286>
- Rivera, M., Amaro, A., & Añaños, F. T. (2020). Fundamentos de la Cultura y Educación para la Paz como medio de inclusión social. *Revista Historia de la Educación Latinoamericana*, 22(35), 13-34. <https://doi.org/10.19053/01227238.11916>
- Rivera Salas, P. E. (2020). Infografías sobre calidad de vida difundidas por el gobierno de México en el sitio “Todo sobre el COVID-19”. *Revista De Comunicación y Salud*, 10(2), 81–108. [https://doi.org/10.35669/rcys.2020.10\(2\).81-108](https://doi.org/10.35669/rcys.2020.10(2).81-108)
- Rodríguez Roura, S. C., Cabrera Reyes, L. C., & Calero Yera, E. (2018). Social communication in health for disease prevention in the community. *Humanidades Médicas*, 18(2), 384-404. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1727-81202018000200384&lng=es&tlng=en
- Secretaría de Cultura. (2018). ¿Sabías que en México hay 68 lenguas indígenas, además del español? *Gobierno de México*. <https://www.gob.mx/cultura/articulos/lenguas-indigenas?idiom=es>
- Sidorenko-Bautista, P., Cabezuelo-Lorenzo, F., & Herranz-de-la-Casa, J. M. (2021). Instagram como herramienta digital para la comunicación y divulgación científica:

- el caso mexicano de @pictoline. *Chasqui: Revista Latinoamericana de Comunicación*, 147, 143-162. <https://doi.org/10.16921/CHASQUI.V11I147.4472>
- Tamayo, U., & Rincón, V. (2017). Social Communication for Human Development. *Revista de Comunicación de la SEECI*, XXI(42), 14-25. <https://doi.org/10.15198/seeci.2017.42.14-25>
- Terán Villegas, O. R., & Aguilar Castro, J. L. (2018). Modelo del proceso de influencia de los medios de Comunicación Social en la Opinión Pública, *Educere*, 22(71), 179-191. <https://www.redalyc.org/journal/356/35656002014/35656002014.pdf>
- United Nations of Educational Scientific and Cultural Organization. (2022). *Decenio Internacional de las Lenguas Indígenas (2022-2023)*. <https://www.unesco.org/es/decades/indigenous-languages>
- Valderruten, I. D. (2021). *La necesidad del uso de la infografía en la divulgación científica* [Undergraduate Thesis]. Universidad Pontificia Bolivariana, Colombia. <http://hdl.handle.net/20.500.11912/9721>
- Vilaplana Camús, A. J. (2019). Las infografías como innovación en los artículos científicos: valoración de la comunidad científica. *Enseñanza & Teaching*, 1(37), 103-121. <https://doi.org/10.14201/et2019371103121>
- World Health Organization. (2023). *Información básica sobre la COVID-19*. <https://www.who.int/es/news-room/questions-and-answers/item/coronavirus-disease-covid-19>
- Zajícová, L. (2017). Lenguas indígenas en la legislación de los países hispanoamericanos. *ONOMÁZEIN*, Revista de lingüística, filología y traducción, *Especial*, 171-203. <https://doi.org/10.7764/onomazein.amerindias.10>