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CREATION OF NARRATIVES IN THE MAZATEC INDIGENOUS LANGUAGE AS A METHOD TO ENCOURAGE THE USE OF THE LANGUAGE AND PROPAGATION IN THE NEW DIGITAL MEDIA

BETZABET GARCÍA-MENDOZA¹, JOSÉ L. GARCÍA-MARTÍNEZ², PAOLA N. GONZÁLEZ-VALENCIA³, FRANCISCO X. VALENZUELA-KAT⁴ AND CARLOS R. JAIMEZ-GONZÁLEZ⁵

ABSTRACT

In Mexico there are 68 linguistic groupings with 364 variants, all of them considered indigenous languages. At the beginning of the 19th century, 60% of the Mexican population spoke an indigenous language, but by the year 2016 it was only 6.5%, which is a sign that indigenous languages are becoming extinct. Of that population that speaks an indigenous language, 3.2% speak Mazatec, a language belonging to Oaxaca, Mexico; which is considered by UNESCO as a language "vulnerable" to the danger of extinction. For this reason, it is considered necessary to carry out actions that encourage the use and practice of indigenous languages, in addition to granting them validity and visibility through new digital media, mainly the Internet. In this paper we propose the development of a web tool for the generation of narratives in a comic format, since storytelling develops language skills such as learning the meaning of words and syntactic rules. The goal is for Mazatec speakers to create narratives about their culture and traditions using their mother tongue; besides giving them the possibility to share these narratives in social networks.

Keywords: Mazatec indigenous language, Narratives, Digital media.

INTRODUCTION

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), in 2003, 97% of the world's population spoke 4% of the languages in the world, while in the other 3% of the population the greatest linguistic diversity was concentrated with 96% of the remaining languages (UNESCO, 2003).

In the case of Mexico, according to the Catalog of National Indigenous Languages published by the National Institute of Indigenous Languages, there is an important linguistic diversity, consisting of 11 linguistic families from which 68 linguistic groups derive with 364 variants (INALI, 2008). This situation makes Mexico one of the countries with the greatest cultural and linguistic diversity in America.

However, the indigenous languages are disappearing; at the beginning of the 19th century 60% of the Mexican population spoke an indigenous language (INALI, 2010) and for the year 2016 only 6.5% (INEGI, 2016); this is an example of the process of linguistic displacement, which happens when the majority of speakers of a language A replace their use by another language B, the result within a community implies that communication between speakers stops being done in language A and it happens to be done in language B.

⁵ Associate Professor, Information Technology Department, Metropolitan Autonomous University, Mexico. Email: cjaimez@correo.cua.uam.mx.



¹ MSc Student, Faculty of Communication Sciences and Design, Metropolitan Autonomous University, Mexico. Email: 2163800102@alumnos.cua.uam.mx.

² MSc Student, Faculty of Communication Sciences and Design, Metropolitan Autonomous University, Mexico. Email: 2163800148@alumnos.cua.uam.mx.

³ MSc Student, Faculty of Communication Sciences and Design, Metropolitan Autonomous University, Mexico. Email:

^{2163800013@}alumnos.cua.uam.mx.

⁴ MSc Student, Faculty of Communication Sciences and Design, Metropolitan Autonomous University, Mexico. Email: 2163800175@alumnos.cua.uam.mx.

From the total population that speaks an indigenous language in Mexico, 3.2% speak Mazatec (INEGI, 2016), so in the Atlas of the world's languages, UNESCO catalogs Mazatec as "vulnerable" (UNESCO, 2017). On the other hand, UNESCO has declared indigenous languages as an intangible heritage of humanity, as it is an invaluable cultural wealth that cannot and should not be ignored. It is therefore important to focus on one of the many problems that are causing the extinction of these languages, such as the problem of the displacement of indigenous languages.

There are, of course, people who consider that the death of these languages [the indigenous] is inevitable and that, furthermore, there is no reason to suffer about it since linguistic unification is highly desirable. In contrast to such an attitude, there are others who think that the disappearance of any language impoverishes humanity (León-Portilla, 2001).

This paper provides a review of the state of the art of three web tools that allow creating comics. It also provides a proposal of a web comic generator with a thematic about the Mazatec culture, with the aim of putting into use the Mazatec indigenous language of the state from Oaxaca, Mexico. The rest of the paper is organised as follows. The next section analyzes some existing tools for creating comics. The third section briefly explains the S'ui K'ien festivity that takes place in Oaxaca as part of the Mazatec culture. The fourth section describes the proposal of the web comic generator that is being developed, the relevance of the use of the narratives, in the comic format, for putting into practice the Mazatec indigenous language, and finally, the interface design of the web comic generator. Finally, the fifth section provides some final thoughts.

RELATED WORK

This section presents the state of the art related to online tools for the creation of comics. Three tools were analyzed and evaluated, and a comparison table was generated with some of their most important features.

Pixton

It is a tool (Pixton, 2018) that allows the creation of comics, based on the choice of a comic format: comic strip (frames of the same size), storyboard (each frame can have a title and a description), graphic novel (the size of the frames is variable). For each comic format the user can choose between the beginner level and the advanced level.

At the beginner level you can choose for each frame, the setting and the characters, as well as edit the dialogues of each character. Concerning the characters, you can modify the body position, the facial expressions, the skin tone (6 different tones), and rotate the image in mirror format.

At the advanced level you can choose for each frame, the scenario and the characters (predefined), as well as edit the dialogues of each character. Regarding the characters, you can choose a predefined position or create a new one by clicking on the character and moving each point of articulation (knees, elbows, neck, waist, etc.). Additionally, the user can create their own facial expressions, choosing between different options of images of eyes, eyebrows, hands, mouths, etc., as well as choosing the skin tone (128 different tones).

It should be mentioned that it is not a free tool, it has different rates depending on the use (leisure, schools, businesses), in the same way each option has different functionalities, for example, in the business version the user can choose not to use the predefined images, but to provide its own images. It is a tool with many features, which gives the user total freedom to create a fully customised comic. You can access a free trial for a month with the leisure version.

Stripgenerator

It is an online tool (Stripgenerator, 2018) that allows the creation of comics. The tool menu consists of four menu items: frames, characters, elements and text.

In the frames menu item, the tool allows to choose between a row, two rows and full page, each of the previous options has a series of different settings, as well as the option to customise the frames.

In the characters menu item, the characters are all in black and white. The illustrations have a "cartoon" style, and all of them have unrealistic bodies (head larger than the body, square bodies, rounded bodies, etc.); these characters can be rotated 360 degrees inside the frames, which allows to position them at any angle, in addition the tool allows to increase its size or decrease it. Another type of characters are the beings, which have the same features of colour, black and white, and unbalanced proportions in their body; examples of them are the following: dog, rabbit, skeleton, robot, pumpkin, devil, snowman, Batman, and some others that can be considered monsters.

The element menu item has two sections: objects and forms. Examples of objects are the following: umbrella, ice cream, briefcase, bed, cap, syringe, racket, clock, hammer, guitar, etc. Elements can be used to give more context to the scenes in each frame, since the tool does not have the option to include scenarios, so the use of objects and shapes help to create a context in the scene, in addition to give extra elements to each character in the role that develops in the comic.

The text menu item is divided into three sections: speech, thought and titles; the difference between each one is reduced to the line or figure that come from the same speech bubble; in the case of speech it is a straight line, for the thought there are two small circles and finally, the option of title has no line related to the figure.

The tool is simple to use, besides it has no cost to use. There is the possibility of publishing the comic on a blog that is part of the website, or print it directly. It should be noted that Stripgenerator has fewer functionalities compared to Pixton, and gives fewer editing options to the user.

PlayComic

It is an online educational tool (PlayComic, 2018) that allows the creation of comics. The tool is aimed at children and young people at the primary, secondary and high school levels; the aims of the use of the tool are to improve the linguistic expression, to review the spelling and to learn to create stories. In case of using a language different from the maternal one (English in this case), the aim is to expand the vocabulary and improve the grammatical structures, as well as the expressions of the language in question.

The tool shows eight different page models to be used, which are differentiated by the arrangement of the frames inside the page. For the creation of the comic, the frame to be worked is selected and the work area is concentrated in the selected frame, within which you can make use of scenarios, characters, objects, speech bubbles and effects.

The scenarios can be chosen according to scenes indoors (rooms) or outdoors (city, forest, mountains), or you can choose a specific sky (sunrise, sunset, dusk) as well as a floor (earth, grass, pavement). On the other hand there are twelve different characters and each with different positions (sitting, lying, jumping, running, etc.), the characters are women, men and a superhero.

The objects provided by the tool are divided into eight categories: interior furniture (chair, bed, armchair), interior decoration objects (vases, lamps, picture frames), outdoor objects (trees, plants, bushes), manipulatives objects (hammer, ball, notebook), houses (field, buildings, facades), machines (automobile, spaceship), valuables (chests, rings, money sack), and animals (dog, cat, bear, fox).

The speech bubbles are the objects where the dialogues or the onomatopoeias are introduced; there are circular, oval and rectangular speech bubbles for normal dialogues; there



are also special speech bubbles recommended for situations where thoughts or feelings of fear are involved. Finally, the effects section allows the user to enter illustrations that refer to speed (series of horizontal lines), hits, dizziness (stars), among others.

The tool is free and the created comic can be printed directly from the tool or saved in a TXT extension file, which can only be opened inside the tool (it is a file of numbers). An advantage is that you can edit your comic again.

Comparison

Table 1 shows a comparison of features among the three tools covered in this section: Pixton (T1), Stripgenerator (T2), and PlayComic (T3). The tick indicates that the tool has the feature, and the cross indicates that the tool does not have it.

Feature	T1	T2	T3
Resizing of elements	✓	✓	✓
Text editing	\checkmark	\checkmark	\checkmark
Frame templates	×	\checkmark	\checkmark
Different positions of characters	✓	×	✓
Predefined images	\checkmark	\checkmark	\checkmark
Downloadable file	×	×	\checkmark
Editing of facial gestures and skin tone	\checkmark	×	×
Different comic formats	\checkmark	×	×
Upload your own images	\checkmark	×	×

Table 1. Features of tools analysed.

THE S'UI K'IEN FESTIVITY

Within the Mazatec culture there is a festivity called S'ui K'ien, in English it is translated as the "Day of the Dead". It starts on the 27th of October and it finishes between the 2nd and the 5th of November, depending on the community. S'ui K'ien is the most important festivity for the Mazatecs, since it gives rise to the development of diverse cultural, economic and social activities, but above all, it represents a space of social agglomeration.

The festivity begins on the 27th of October with the dance of the huehuentones (Mazatec dancers in Nahuatl); in the Mazatec language they are known as Cha Xo Ó, which means the men fruit of the navel of the earth. The huehuentones are men that use costumes with jonote wood masks (although lately the use of rubber masks predominates); traditional clothes of the Mazatecs, which include jorongos, huipiles, and huaraches; and straw hats made by hand by themselves. The huehuentones are groups conformed by young people, adults, children and a smaller number of women. These groups go from house to house guided by Mazatec musicians who perform melodies through the execution of the violin, the vihuela and the drum (the latter made with jonote and goat skin), and songs in Mazatec. The music of the huehuentones has become fundamental as a cultural manifestation of the Mazatecs, although it is linked to the celebration of S'ui K'ien and its temporality, it is the only musical manifestation that the Mazatec can hear in their language, as all the songs must be in Mazatec, which generates an explicit use of the language since "this Mazatec music maintains a great vitality, for that reason it can be considered as a great mechanism that contributes to strengthen the collective identity of the group, because all the inhabitants of the region share knowledge and taste for this cultural manifestation and identifies with it" (Quintanar, 2007: 68).

It should be noted that more than a festivity it is a ritual that makes possible the reunion with the deceased ancestors. According to the myth, the huehuentones go to the cemetery to lend their body to the deceased, and thus their ancestors can return to life to enjoy the food, the coexistence with its family, the dance and the music, with the permission of the mother earth and only for the days that the festivity lasts (seven to ten days depending on the community).

In addition, the wooden mask is used because it is believed that family members could be frightened if they see their faces. The festivity culminates with four evenings in the cemetery, the Mazatecs go to the tombs of their deceased relatives and light candles so that they can light their way back to the other world.

S'ui k'ien is a festivity that reinforces the identity of the Mazatecs and it is linked to various activities such as collective work, solidarity, the exchange of objects; actions that reflect the values of the community and that strengthen the bonds between the individuals that comprise it. The festivity is currently the main reason for the Mazatecs to preserve their mother tongue.

PROPOSAL

The proposal of this paper is the creation of a web tool for the generation of comics, with the aim of putting into use and practice the Mazatec language from the narration of stories about their culture. This section briefly explains what a comic is and why it is relevant to put the Mazatec language into practice. Additionally, the first stage of system design is shown, starting with the creation of mockups for the user interface.

It is important to mention that a comic is a means of communication that makes use of images and signs, but with concrete, eminently graphic signifiers that can be linked or dissociated from accompanying texts to articulate messages (Barrero, 2012). In the chapter From the vignette to the graphic novel: a model for understanding the story, written by Manuel Barrero, it is mentioned that:

We will understand that this is a comic when that expression communicates a message of a narrative nature, for which it uses its own language [...] to narrate is to refer linguistically or visually a succession of events in a temporal framework, obtaining as a result a transformation of the starting situation. From the semiotic point of view, the narration could be made with any group of signs, but narratology tells us that these signs must be of a linguistic type and be structured in a narrative sequence to communicate a story [...] Remember that a story is the succession of events that could be the subject of narrative discourse, while narration is the sequential representation of real, fictitious or other events, in any medium through a statement, that is, a story (Barrero, 2012: 30).

In order to carry out this research, it was taken into consideration the work done by Eva Salgado and Frida Villavicencio, in which they promote reflection on the aspects that should be taken into account when undertaking a project that involves multimedia material in multicultural contexts and linguistic diversity. The aspects mentioned above have been reflected in the book Multimedia materials in contexts of linguistic and cultural diversity, where the problem of linguistic displacement is also mentioned and in this respect the authors consider that Information and Communication Technologies (ICT) "can be used to reverse this trend and promote processes of revitalisation, development and rescue of minority languages. The use of languages in public spaces, such as the media (mainly radio, television and Internet) gives them a new functional scope and gives them validity, prestige and visibility before national and international society" (Salgado and Villavicencio, 2011).

In addition, Salgado and Villavicencio (2011) believe that multimedia materials "theoretically should promote the development of language and communication skills of users; nevertheless, in practice, what the programs and their activities stimulate and demand from the child is, frequently, that he acts as a translator. It is desirable that developers present options that motivate users to construct sentences and produce texts in the language in which they are working on: if it is Mayan, that the child 'thinks' in Maya to create a text, that does not translate from Spanish to Maya what he thought" (Salgado and Villavicencio, 2011: 28). Additionally,



they mention that multimedia programs should encourage the development of language skills such as speaking, listening, reading and writing.

Therefore, it is considered that the creation of narratives is an appropriate method to encourage writing in Mazatec, mainly about their culture and traditions, since in these narratives there are spoken words that have a meaning only in Mazatec, characters and scenarios that only they can be named and represented in Mazatec, etc. In this regard, Foley (1991) says that "through language, man makes all aspects of life, its values, traditions and beliefs intelligible: he names, codifies, classifies the world and makes it his; it produces, reproduces and acts on it, creating culture. The language of a community contains and allows to transmit its particular vision of the world" (Foley, 1991: 235).

In addition to encouraging the writing of the Mazatec, the fact of using contents of their own culture, it would be reinforcing Mazatec identity and traditions, as mentioned by Salgado and Villavicencio:

The presence of native languages in multimedia programs favors the constitution of identity among users who have these languages as their mother tongue. A child who accesses a program in which their language is used, will feel more identified with the proposal if the contexts of use and content presented to him have to do with their culture; without a doubt, it will be a motivation to use it. It is important, therefore, that the linguistic contents recover "authentic" expressions, words and genres, situations that are familiar to the user, similar to others that they have witnessed or in which they will participate in the course of their life, members of a culture and a society (Salgado and Villavicencio, 2011: 30).

Currently, some projects have been directed towards the production of narrative texts, based on the collection of traditional values, myths and legends. An example is the project We produce narrative texts based on the compilation of Andean knowledge as a means of developing communication skills in Primorpampa students in Peru, where the authors propose compiling their own oral tradition and starting from them, the students produce their own narrative texts, which not only allow them to develop skills to produce texts, but at the same time, allow them to strengthen their identity. As a result of this project, students write stories incorporating the cultural richness of their community.

Another example is the work of the undergraduate student Eduardo Vicente Jiménez, who translated the spiderman comic into the Zapotec language, as part of the international day of indigenous languages in Mexico. This work has been very well received by children and young people (El Universal, 2015); some events have been organised where several copies of the comic have been made available to the community and have had an important impact. However, it should be considered that besides the possibility of reading "international" content in an indigenous language, there should have the possibility of creating new contents that are closer to the cultural contexts of the indigenous community.

In addition, Strickand (1988) believes that narrative tasks involve students in learning activities, which encourage the development of joint and related oral and written language. On the other hand, Norris and Ennis (1989) believe that narrative activities affect the development of specific language skills, such as the acquisition of the meaning of words and the learning of syntactic rules. Finally, Kuchenbecker (2010: 199) believes that: "the experience of telling stories allows us to place ourselves in the place of the characters, living the same situations, the same feelings, cultivating values that we take over forever in our being-in-the-world, in our coming-to-be".

Given the previous arguments, the proposal is to develop a tool that allows generating narratives in the comic format, from graphic material already provided, which will be based on the festivity S'ui K'ien. In order to encourage the use of oral language, it was also decided that the narratives were related to the songs that the huehuentones sing during the festivity, which provide messages from their ancestors to the community, messages of peace, love, nostalgia,

etc. However, the tool will not be limited to the option of taking a song as a base, the creation of the narratives will be flexible enough.

INTERFACE DESIGN

Currently, the project is in the implementation stage, for which previously low fidelity sketches were made (on paper) to perform tests with users; feedback was obtained from the same users and corrections were made, which were reflected in medium fidelity sketches, which are shown below. The sketches were produced using the website: https://app.moqups.com. It should be noted that the icons shown are not the ones used in the final web tool, they were only used to guide the users in the tests performed.

Figure 1 shows the welcome page of the web comic generator, where the user is invited to narrate a huehuenton song in the Mazatec language.

Figure 1. Welcome page of the web comic generator.

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→	O http://mazaTIC.uam.mx				
	Generador de Historietas				
	Te invitamos a que generes tu propio contenido. A partir de una canción de huehuentones, crea una narrativa en formato de historieta. Elige los escenarios y personajes que te ayuden				
	a narrar la historia de la canción. Escribe y exprésate en mazateco.				
	Comenzar				

Figure 2 shows the home page of the web comic generator, where there is a main menu on the left side, which has the following elements: boxes (recuadros), scenarios (escenarios), characters (personajes), messages (mensajes) and onomatopoeias (onomatopeyas). The right side of the page has a working area with a blank space for the creation of the comic, which will show one frame at a time. The number of frames shown on the working area will depend on the template of boxes that the user has chosen for creating the comic.

The boxes menu element contains a series of predefined templates that will allow the user to choose the number of scenes and the arrangement of them within a blank page, as shown in Figure 2. Scott McCloud mentions in his book Understanding the comic: art invisible, that "each bullet acts as a kind of indicator that informs us that time and space are being divided", in such a way that wider vignettes convey a feeling of longer duration of time (McCloud, 2009: 95); for that reason, different templates will be presented, in such a way that the user uses the one that he considers most convenient to narrate his story.

The scenarios menu element will give context to each scene. In this menu element, the user will be presented with several images from the Mazatec mountain, the evening held in the cemetery, the offerings made in the houses with symbolic elements, the community gathered on the streets, among others. These images will be displayed below the scenarios menu element, as can be seen in Figure 3.



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•		
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> Mensajes	Vista preliminar	Finalizar
> Onomatopeyas		_

Figure 2. Web comic generator with the boxes menu element displayed.

Figure 3. Web comic generator with the scenarios menu element displayed.

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> Personajes 💿		
> Mensajes	Vista preliminar	Finalizar
> Onomatopeyas		_

Since the entire community is involved in the festivity, the predefined characters that the tool will contain will be: children, youth, adults, seniors and the mythical figure of the huehuentones, all of them wearing traditional clothing from the region. The characters can be chosen from the drop down content displayed under the characters menu element, as shown in Figure 4. Additionally, the user will have the possibility to choose from four different body positions that each character will have, as can be seen in Figure 5. It should be noted that the images shown in the sketches are not those that will be used, only example images were used to guide the user in the testing stage.

Additionally, the web tool will have different types of speech bubbles, which will allow the user to use visual resources to convey feelings and different tones of voice in each dialogue; for example, using a contour dotted on a balloon transmitting a low voice, or a contour with protruding peaks usually transmit a scream. "The shapes of the speech bubbles are numerous and each day new ones are invented. The creators of comics have always make an effort to devise variations, in a desperate attempt to represent sound in a strictly visual medium" (McCloud, 2009: 134). Figure 6 shows the messages menu element, which shows the different types of speech bubbles that the user can use for creating a comic.

Figure 4. Web comic generator with the characters menu element displayed.

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> Recuadros		
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✓ Personajes		
> Mensajes	Vista preliminar	Finalizar
> Onomatopeyas		

Figure 5. Web comic generator with the body positions for a specific character.



Figure 6. Web comic generator with the messages menu element displayed.

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> Escenarios		
> Personajes		
✓ Mensajes		
 Onomatopeyas 	Vista preliminar	Finalizar

The onomatopoeias allow the user to give sound to the drawings. Scott McCloud says that the onomatopoeia allows to listen with the eyes: "Onomatopoeias are unique inventions



that you can improvise like crazy [...] there are no 'right' or 'wrong' perspectives but there are some variables within which you can improvise. Including volume, indicated by size, bold, inclination and exclamation marks; the quality of the sound, its roughness, ripple, sharpness, softness, etc.; association, font styles and forms that refer to or imitate the sound source; graphic integration, pure considerations of form, line and color, as well as how the effect mixes with the drawing." (McCloud, 2016: 183).

Nowadays, there are very used onomatopoeias like BANG! (shooting sound), BOOM! (pump sound), RING! (telephone sound), etc. However, for this project it is proposed to create onomatopoeias in the Mazatec language; for example, how do dogs bark in Mazatec?, in Spanish they do GUAU!, in English they do WOOF !, so onomatopoeias will be created to relate to the orality of the Mazatec language.

The user can always see a preview of the comic he is creating, by clicking on the preview button, and he will get a result like the one shown in Figure 7. It should be noted that from that preview the user can return to continue editing the content of the comic or finish it. If the user finishes the comic, he will be taken to the web page shown in Figure 8, where he can share his comic in social networks or download it directly to an image file.

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Figure 8. Web comic generator with the download and share options for a comic created by a user.



FINAL THOUGHTS

In summary, the aim of this paper was to present a web tool to put the Mazatec language into use and practice in its written form, through the narration of stories in a comic format. This will promote the development of specific language skills, such as the acquisition of the meaning of words and the learning of syntactic rules. One of the important features of the proposed web comic generator is to have the possibility to share the comic created in social networks, which would be contributing to the dissemination of the language in the new media and thereby providing a new functional scope, validity, prestige and visibility before national and international society.

Finally, upon completion of the implementation, it is planned to carry out tests with users in order to correct possible errors. It should be noted that there are the necessary Internet services and computer equipment for the use of the web tool within the Mazatec communities, both in the mountains of Oaxaca and in the cities where they have migrated.

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