

## Design of a graphic interface based on cultural aspects of the Tének language for the monolingual learning platform Ka Exla'

JIMÉNEZ-MALDONADO, Rosa María†\*, LARRAGA-ALTAMIRANO, Hugo Rene, HERNÁNDEZ-LÓPEZ, Dalia Rosario and VEGA-GUERRERO, Gemma

Received January 7, 2016; Accepted June 15, 2016

### Abstract

Today the company employs the use of technological resources for the benefit of the education system, helping virtual education with the use of computer innovations. Striking and creative interfaces, learning models based on inference and modeling architectures learning users interested in a new language or language use. There is a Mayan family language in the region known as Huasteca located in the Gulf of Mexico, called Tének. It is spoken by at least 174,000 people, and it is very common that being a language of oral tradition the vast majority of its speakers are unaware of formal writing. Considering the previous, Ka Exla' an educational platform on Tének language was built. The objective of this platform is to provide a learning tool for speakers of the language to formalize Tének writing in their tongue. A graphical interface based on the cultural aspects of the language was designed, allowing a docile navigability and uniformity on every page, in order to consider the traditions and customs of the Huasteca culture for better acceptance among the community.

### Graphic interface, Educational platforms, languages Originatin

**Citation:** JIMÉNEZ-MALDONADO, Rosa María, LARRAGA-ALTAMIRANO, Hugo Rene, HERNÁNDEZ-LÓPEZ, Dalia Rosario and VEGA-GUERRERO, Gemma. Design of a graphic interface based on cultural aspects of the Tének language for the monolingual learning platform Ka Exla'. ECORFAN Journal-Spain 2016, 3-4: 47-60

\* Correspondence to Author (email: rosa.jimenez@tecvalles.mx)

† Researcher contributing first author.

## Introduction

The graphical interface or user interface refers to the graphical elements that allow the interaction of systems, allowing to improve the usability of the same.

Nowadays Web-based systems are very popular computer resources and having a good graphic design allows the user to feel comfortable during their interaction.

Web design should take into account aspects such as: the delimitation of the theme, collection of information, aggregation, content structure, creation of navigation systems and search, design and style of graphics and final assembly.

Ka exla' Is a project that aims to offer teaching modules for the writing of the Tének language to speakers of the same through a monolingual platform in Internet, to achieve this goal, we plan to design a web system that visually appeals to interested users.

It is contemplated that the designs contain a high degree of aspects close to the Tének culture which allows users to feel related to the system and increase their interest in using and learning their content, differentiated from other teaching platforms whose design does not contemplate these aspects.

The article has the following sections, Tének Language Background, Teaching of native languages, Educational platforms, Graphic interface design for Ka exla', results and conclusions.

## Tének Language Background

In Mexico there are 11 linguistic families scattered throughout the territory. Of these follow 68 languages and 364 dialects (INALI, 2008).

The Huasteco, which is also called Tének, is a language of the Mayan family spoken in the region known as the Huasteca (Veracruz y San Luis Potosí), In the Gulf of Mexico (Ochoa, 1883). According to INEGI data at present, there are at least 173,765 people who recognize that they are speakers of this language in the country. The Tének occupies the number twelve place among the most spoken languages of the country and the second most important for the state of San Luis Potosí, nevertheless the first one in importance for the Huasteca where it develops this project.

The territory occupied by the ancient Tének according to the historian Joaquin Meade, was much more extensive than the present one, occupying a large extent in the eastern coastal zone of the Mexican Republic, to the north from the Gulf of Mexico and the Sierra Madre Oriental to the river Cazonas, encompassing important portions of the present states of Tamaulipas, San Luis Potosí, Hidalgo, Veracruz, Puebla y Querétaro.

To the present day in the state of San Luis Potosí those who need are the municipalities of Aquismón, Tanlajás, Tampacán, Ciudad Valles, Huehuetlán, San Antonio y Tancanhuitz de Santos and in the states of Veracruz In congregations of Mata del Tigre y Xiloxuchil, in Tantoyuca, and in the municipalities of Chontla y Tancoco.

The Tének language has been preserved fundamentally through orality use also since the 1980s the federal government has implemented conservation and language revitalization policies.

But it is not until 2003 when the General Law of Linguistic Rights of Indigenous Peoples is enacted, where each indigenous Mexican language is recognized as an integral part of the national cultural and linguistic heritage.

Article 11 of such law states, The federal and federal educational authorities, ensure that the indigenous population has access to obligatory education, bilingual and intercultural, And take the necessary measures so that in the educational system respect for the dignity and identity of persons, as well as the practice and use of their indigenous language. Likewise, at the middle and higher levels, Interculturality, multilingualism and respect for diversity and linguistic rights will be promoted.

### **Teaching of Original Languages**

A language is in danger when its speaker loses interest in communicating through it and stops transmitting it to the next generation.

The policies that until some years ago followed the educational system were to achieve the development of indigenous peoples through their assimilationism, perceiving these as obstacles to development, where the modern ideal was from rural to urban, from dialects to languages.

The intention was to use integration of the speakers in the development, out of marginalization and ideology and culture should be consistent with government policies, which caused the imposition of beliefs associated with values of modernity.

Indigenous education in Mexico dates from the conquest when Philip IV ordered the Castilianization of the Indians, however, it later allows the indoctrination of the Catholic faith in indigenous languages to better instruct in the faith, later Carlos III demands the teaching of Spanish. After the Revolution during the Porfiriato, It is intended to implement the program of National Integral Education, Applying the teaching of Spanish on the Indians to transform them into these national citizens.

In 1939 it was determined that bilingual education would be the educational model for indigenous populations “teaching in the mother tongue”, by teachers who speak the vernacular and imparts their elementary knowledge in the indigenous language to proceed later to the teaching of the national language (Aguirre 1992, 343) After several political ups and downs in 1978, The General Directorate of Indigenous Education is created by the Secretary of Public Education to develop educational plans and programs for indigenous children.

It is up to the Development Plan 2001-2006, which establishes Intercultural Bilingual Education and in 2003 the General Law on Linguistic Rights of Indigenous Peoples was published, where Article 11 indicates that indigenous people have the right to be educated in their own language throughout their basic education.

### **Educational Platforms**

The Educational Platforms are systems that allow the management of educational resources stored in private databases or public policies that allow the monitoring of learning activities, the vast majority integrate multimedia resources in order to make the experience as meaningful as possible.

Teaching through educational platforms can be completely synchronous or asynchronous online, autonomous or guided, as well as a series of derived combinations. As support for face-to-face or semi-face courses.

Its function is to facilitate the creation, administration, management and distribution of courses through the Internet.

There are several types of educational platforms: Commercial Platforms: they are tools that have to pay a fee for installation and / or maintenance that usually varies according to the number of users and that must be renewed from time to time example Blackboard and WebCT. Free software platforms that allow to use the system for any type of purpose, freedom to adapt to the needs and distribute sample copies Moodle and Dokeos.

Own development platforms: those focused on promoting a specific purpose, although most are integrated into the free software, do not have much diffusion as they are integrated into a particular role.

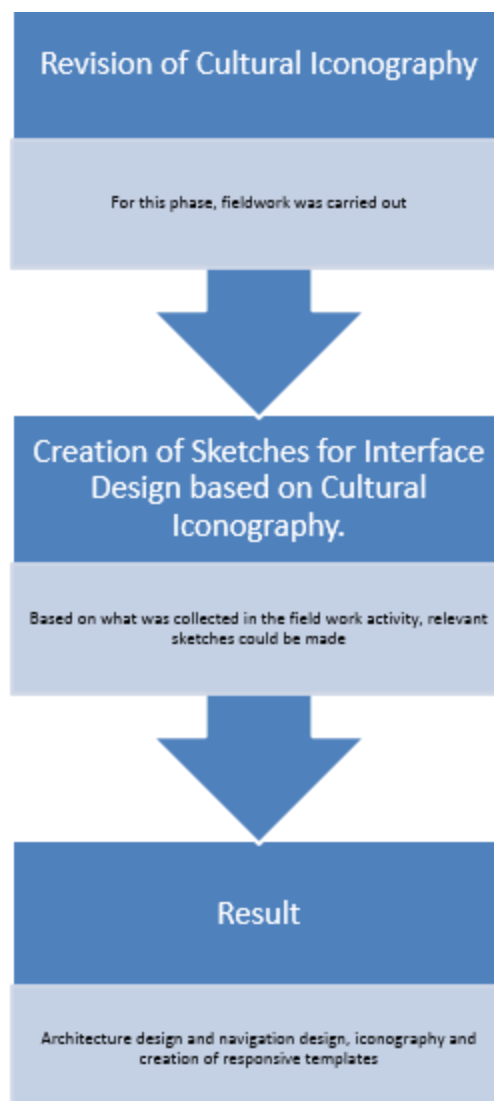
### **Ka exla' PELT (Téneq educational platform)**

PELT is a platform for its own development that aims to manage multimedia teaching resources, from the conception, planning, design, production, evaluation and operation of the material, the relationship with cultural, linguistic, pedagogical, semiotic and technical aspects. Have a functional and pragmatic perspective, with a constructivist approach, intercultural practice and interdisciplinary work, a study of the language developed by bilingual and entolinguistic teachers, where the appropriate variant for teaching is determined, methodology to be followed for teaching the same Reaches of the students.

It is important to mention that the platform will serve for the literacy of speakers of the language as a means of revitalizing the same, in addition to training in the use of technological tools for communication to the communities.

### **Diseño de la interfaz gráfica para Ka exla'**

For the design of the Graphic Interface of Ka Exla', the following methodology was proposed which is.



**Figure 1** Methodological proposal for the design of graphic interface based on cultural aspects

Represented graphically in the Illustration 1, where as an initial phase an iconographic revision of the Téneq culture is carried out.

### **The color**

The colors have an implicit symbolism within the Téneq:

- Green: symbolizes the color of the soul of life because the spirit is detached from the body, in the star tének is painted green the color of the west. In remote times when the woman was widowed, she used the green petob.
- Red: the eternal shirt of the great father authority who cares for the north is red, that is why, in embroidery, the star tének is red border the north direction, this natural color is in the corn.
- Pink: it is the color of the south. Because it is the beautiful living color of mother earth below, love of the earth. The origin of the love, the taste, the generous spirit of tének and the affection between the woman and the man. The bright pink color is found in the flower of the mature pitaya. In embroidery on cross stitch on the star tének to the south direction pink thread is put pink.
- Orange: it is the color of the east, the light of the sun, in other words, orange is the blanket of the universe. (Santos Concepción, 2014)

### The dressing



**Figure 2** Quechquemilt y women's clothes

Las prendas de algodón reconocidas por sus bellos diseños y colores textiles, algunas mujeres Tének hasta el día de hoy suelen llevar sus atuendos bordados como el que se muestra en la Ilustración 2 con su tocado entre tejido con el cabello de estambre de colores rosa, anaranjado, verde, amarillo y rojo, visten falda negra o enredo con faja de tela, blusa de holanes en colores verdes y rosas mexicanos, con encajes en los puños.

The colors depend on the marital status of the person: if married, the red and orange stamens are added; If it is not, the petob will wear only the colors green and pink, and if it is widow can carry all the colors that want.

The tének dress in the man is no longer very common although it was said that it was conformed of blanket trousers, shirt, hat and huaraches. The men bring backpacks of zapupe, while the women use hand embroidered backpacks with animal and vegetable motifs of the place.

(Gallardo Arias, 2004)

### Worldview

What has allowed a Tének worldview are the symbols, which were engraved on snail pectorals, the decoration of vessels and sculptures, also the oral tradition, news and religious ceremonies is an approach to the mysterious world, to this day the Tének especially The women continue to perpetuate their worldview through their embroidery and the men transmitting orally the stories and legends of their culture still alive.

The second phase of the methodology preceded the creation of sketches for the design of the graphic interface based on cultural aspects.

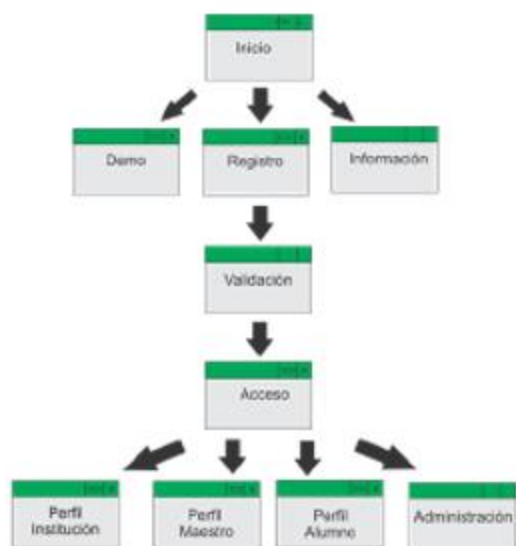
## Organization of Information and Iconography

A clear and simple Organization of Information and Iconography was defined that does not allow saturation of the screen.

## Design engineering

In order for the user to maintain interest in learning a new language, a structure was designed to facilitate the use of the learning platform, taking into account its navigability and cultural themes.

This structure consists of 9 screens: 4 for user access and the remaining others for output. (Illustration 3)



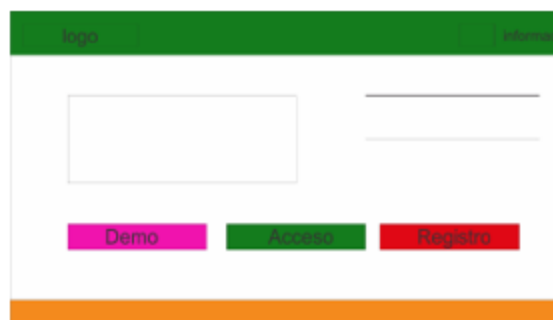
**Figure 3** Block Diagram

The input screens are: the start (where the welcome and main menu is displayed) the registration (where the user will enter the data requested to make a successful registration), the access (will allow users to enter the system), The validation screen (is responsible for validating the authenticity of each user entering the system).

The output screens are: the information (here is the page information as the developers contact version), the demo (shows the user some of the learning activities it will contain), the area of institutions (where teachers and groups are registered), teachers area (in which students will be added to existing groups, as well as assigning learning activities), the area of students learning activities to be undertaken) and the administration area.

When planning the design of a web, it is necessary to study more aspects besides that the design is pleasant and attractive, and one of them is the eye movement that makes the visitor when it enters a web. Jacob Nielsen developed a study using the technique eyetracking (eye tracking), which shows the way people surf the internet.

The first thing is that people do not read, scan the content on the site and determine if it is relevant or not. The study shows an F-shaped pattern where the first thing that identifies the user is the upper left, then down. For this reason in the main page the logo was located in the upper left corner so that users can click on the page to return to the home page, in the upper right was located information about the page (the version, Developers, user manual). Illustration 4



**Figure 4** Start

As for the design of the screen for user management, It was considered that to enter it was necessary that it was recorded, for which a form was designed in which the data must be entered according to the role that each user will play, as described in Illustration 5.

**Figure 5** Registration

A screen was designed that re-directs (Illustration 5) the user where a message that the code is sent to the email provided and a text field was added to enter the validation code (Illustration 6). Subsequently re-directs to the home screen which gives the possibility of starting work session with the system. (Illustration 7).

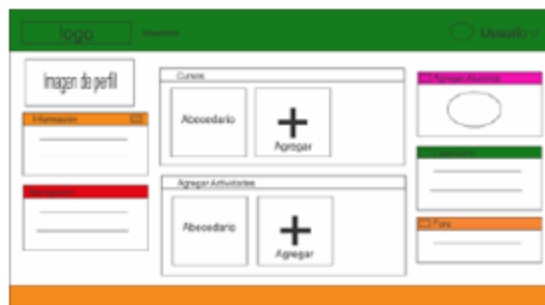
**Figure 6** Validation

**Figure 7** Acces

Once entered into the system appears the work area according to the role that the user will develop. For this we designed 4 screens for different roles: Institution, teachers, students and administrator.

**Figure 8** Institution area

Illustration 8 shows the work area of the institutions where teachers can be added, edit your profile, create workgroups and assign teachers to it, add students and a messaging section.



**Figure 9** Teachers Area

Figure 9 shows the section where the teacher is going to carry out his activities, which are to create groups, generate registration key, edit profile, manage courses, add and edit activities, add students, forum and messaging.

Students can enroll in a group, edit his profile, To do learning activities, Also has a messaging section and a forum. (Illustration 10)



**Figure 10** Student area

In the area of administrator was designed with the sections of configuration where the institutions will be activated, generate learning objects and generate module structure, Also contains a dictionary, repositories of texts and the messaging section. (Illustration 11)



**Figure 11** Administrator

**Architectural design**

The architectural design is responsible for the study and structuring of information. It is in charge of the interaction design, navigation design usability among others.



**Figure 12** Architectural design

**Logo**

The logo on a web page is of utmost importance as this is the first symbol or element, distinctive or emblem with which users can easily identify us.



**Figure 13** Timeline logo Ka exla'



In Illustration 13 you can see how the logo design of the platform evolved, becoming friendlier with clear lines, to include cultural aspects such as colors and clothing in innovative designs and appropriate for an educational context.

## Icons

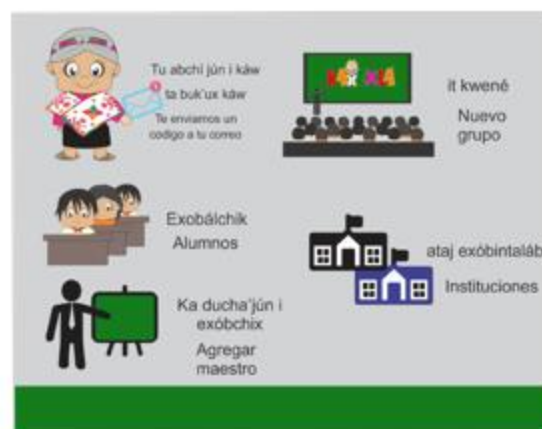
Icons are small elements whose functionality is important since they help not only to grow the content and the design of the website, but also help facilitate the use of the website, making it more friendly, intuitive and easy to use for users who are browsing it.

Envelope to the above, they were designed and developed icons that help us identify each section that forms the interface, since it is a platform of teaching of language Tének these will help the user to remember and understand more easily.

About 15 icons were generated that intuitively indicate the function to be performed. Illustration 13 and Illustration 14.



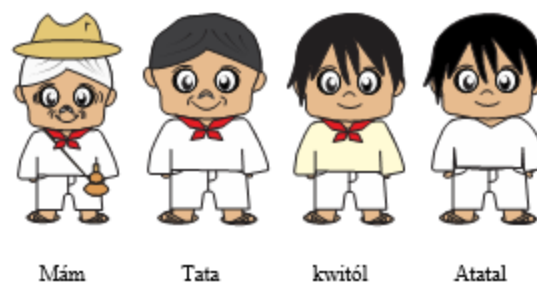
**Figure 13** Some Icons designed



**Figure 14** Some Icons designed

## Characters

Based on the dress models And in order to design other iconographic aspects that served the platform as a means of continuous identification with the community, a series of characters alluding to the family was designed and as it is integrated as shown in Figure 15 which shows the male characters in their traditional dress.



**Figure 15** Male characters

In Illustration 16 the characters of the female sex are also shown with their traditional Tének dress which until today is still used.

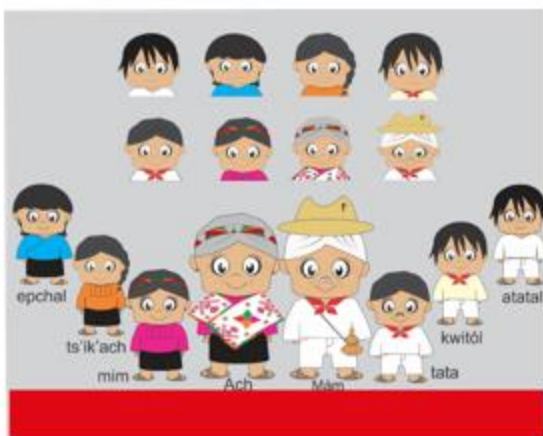


**Figure 16** Female characters

Other designs were made at the request of the developers of the teaching modules associated with the platform and these are the results. Illustration 17 and Illustration 18



**Figure 17** Seasons of year



**Figure 18** Reductions of characters to load user profiles

**Results**

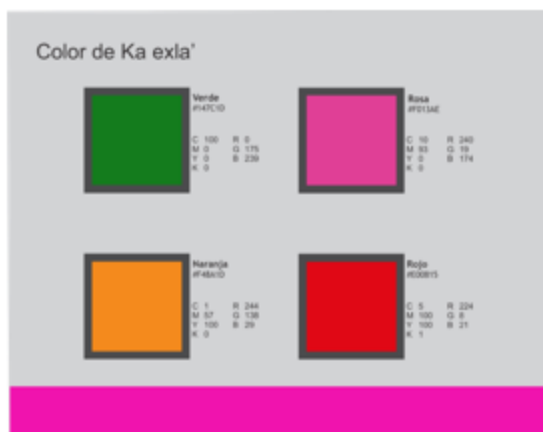
It was possible to obtain a manual of graphic identity which allows to see the adaptations allowed to the designs, the colors allowed to be used on the platform, suggested typography as well as permissible sizes without distortion And loss of image quality Illustrations 19, 20, 21, 22 and 23.



**Figure 19** Graphic Identity Manual



**Figure 20** Allowed changes to the logo



**Figure 21** Accepted Colors

Finally, final screens of the interface designed for the Ka exla' platform are shown Illustrations 24, 25, 26, 27, 28 and 29.



**Figure 24** Starting screen



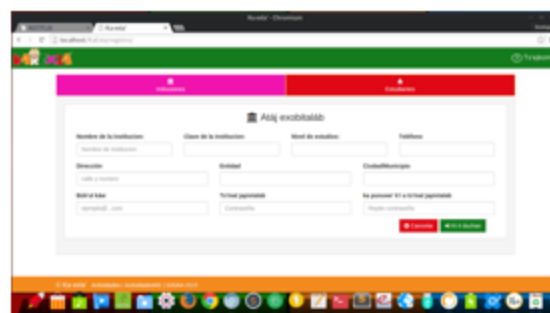
**Figure 22** Proposed typography



**Figure 25** Access to users



**Figure 23** Icon size allowed



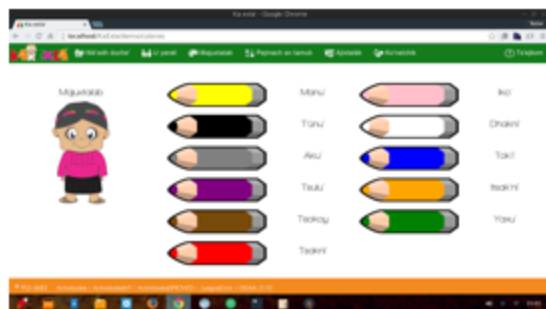
**Figure 26** User Registration



**Figure 27** We send you an email



**Figure 28** Teacher Registration



**Figure 29** Example of design utility in learning activities of modules

## Annexes

We thank the Program of Equity and Educational Inclusion Superior type 2015 for the financing for the development of this project, to the association Dhuchum Tsalap Ti Tének for the support and collaboration, GISAA example of inclusion and equity and the Technological Institute of Ciudad Valles.

## Conclusions

A Graphical Interface was obtained whose design defines visual aspects of the Culture Tének, which can be visited by the community of speakers interested in learning the formal writing of the language or any interested in indigenous languages, it is intended to give continuity to the development of teaching modules with design patterns based on cultural contexts and that the platform can be a reference for the development of teaching modules for other national languages.

## References

Arroyo Mosqueda, A. (2003). La huasteca una aproximación histórica.

Beta, G. D. (s.f.). Guía Digital Beta. Obtenido de <http://www.guiadigital.gob.cl/articulo/que-es-una-interfaz>

Bonsiepe, G. (1999). Del objeto a la interfase: mutaciones del diseño. Buenos Aires: Ediciones Infinito.

Campos, R. M. (2005). Diseño de páginas web y diseño gráfico. Metodología y técnicas para la implementación de sitios web y para el diseño gráfico. España: IdeasPropias Editorial, S.L.

Castilla, G. A. (2003). La Huasteca, una aproximación histórica. México.

CCM. (Enero de 2016). Webmastering - Diseño web. Obtenido de <http://es.ccm.net/contents/781-webmastering-diseno-web>

Definicionabc. (2007). Obtenido de definicionabc: <http://www.definicionabc.com/comunicacion/disenografico-2.php>

- Galanet. (s.f.). Obtenido de <http://www.galanet.eu/dossier/fichiers/Que%26%23769%3B%20es%20la%20Cultura%3F.pdf>
- Gallardo Arias, P. (2004). Comisión nacional para el desarrollo de los pueblos indígenas. Obtenido de <http://www.cdi.gob.mx>
- Hamidian, B., & Soto, G. y. (2006).
- Plataformas virtuales de aprendizaje: una estrategia innovadora en procesos educativos de recursos humano. Carabobo- Venezuela.
- Iglesias, J. R. (2006). Docplayer. Obtenido de <http://docplayer.es/6665999-Capitulo-3-diseno-de-interfases-e-interaccion.html>
- Lapuente, M. J. (08 de Diciembre de 2013). Obtenido de [http://www.hipertexto.info/documentos/dise\\_g\\_web.htm](http://www.hipertexto.info/documentos/dise_g_web.htm)
- Parkin, A. (1999). Exploraciones en neuropsicología cognitiva. Madrid.
- Perez Zeballos , J. M., & Arroyo Mosqueda, A. (2003). La huasteca una aproximacion historica.
- Portero, P. F. (Abril de 2007 ). sorkari. Obtenido de <http://sorkari.com/pdf/Psicologia%20Cognitiva.pdf>
- Presman, R. S. (2006). ingenieria de software. Mc Graw Hill.
- Santos Concepción, L. (2014). Iconografía tének de origen ancestral.
- Tapia Mendoza , A. (Enero de 2004). uacj. Obtenido de <http://www.uacj.mx/IADA/DD/LDG/Documents/LECTURAS%202014/Lectura%20de%20Me%20-%20Enero2014%20-%20Definicion%20de%20Diseno.pdf>
- UNESCO. (2005). Obtenido de Organización de las Naciones Unidas para la Educación y Diversificación, la Ciencia y la Cultura: <http://www.unesco.org/>
- Van 't Hooft, A. (2014). uaslp.academia. Obtenido de <http://uaslp.academia.edu/AnuschkaVanHooft>
- Vertice, E. (2009). Tecnicas avanzadas de diseño web. Vertice.