

## **Technological preferences for teaching-learning a second language in Huichol communities and private high-schools in Mexico**

**Raúl César Romero González<sup>1</sup> & Marcela Georgina Gómez Zermeno<sup>2</sup>**

Tecnologico de Monterrey, Mexico

raulcesar88@gmail.com & marcela.gomez@itesm.mx

### **Abstract**

This research enquires about the Information and Communication Technologies preferences of students, teachers, and school principals in the teaching-learning process of a second language in 9<sup>th</sup> grade in two settings: Spanish for the Huichol people in a remote rural area and English for a private school in the city. The first case is situated in a rural Huichol community in the high mountain area of Jalisco, Mexico. The second one is located in a wealthy neighborhood in the Western Metropolitan area of Mexico City. A qualitative methodology with a heuristic and ethnographic design to investigate the reality of the daily use of technologies in both contexts for learning a second language. The instruments were the participant observation and in-depth interviews. Among the key findings are: (a) the participants tend to favor the use of technology for second language learning, (b) the bandwidth and the speed of the Internet is crucial to strengthen the immersion into the culture of a second language, (c) Educational communities support electronic enquiring, (d) there are similarities in the preferred search engines between the two populations, (e) the equity of education is hindered by school desertions, and (f) educational innovation requires that similar investigations take place to foster a full performance in the society of knowledge.

**Key words:** equality, indigenous languages, second language, cultural diversity

### **Introduction**

The purpose of this investigation aims to find the strategy that contributes to improving the quality of teaching-learning process through technology to groups that have not had the opportunity to access to Information and Communication Technologies (ICT). The problem under study is the learning of a second language (Spanish) in an indigenous school in the township of Mezquitic Township, Jalisco; likewise, the investigation also focused on a private bilingual school in Mexico City, regarding the learning of a second language (English). The teaching-learning process of the indigenous peoples in Latin America may be improved for best

results, and should be analyzed to identify how learning occurs. On this respect, it is important to examine the social and cultural context of these learners.

Multicultural schools worldwide provide instruction for the acquisition of a different language from their native one. In the current socio-cultural context of the Mexican society, the acquisition of English prevails as the preferred second language, and some schools incorporate French as a third Language into their academic delineation. On the other hand, for the *Wírraritari*, the name for the Huichol community, traditional teachings use the term *tewi niukuyari* (words of the people) to designate their own lingo. In *Wírrarika* (plural for *wírraritari*) junior high schools, English is incorporated as a field of study. In the indigenous Huichol communities, schools begin to teach Spanish in the fourth grade of basic education (Instituto Lingüístico de Verano A.C., 2009).

Regarding studies about equality in rural indigenous teaching-learning processes, Ramírez (2006) comments about the *e-indigenous* portals provided by the General Direction of Popular Cultures, funded by the National Council for Culture and Arts. Their mission is to contribute to the creation of social conditions that enable a respectful inter-cultural dialogue that entails an understanding of the cultural richness and diversity of the country; it was established to promote the dissemination and development of the indigenous cultures in Mexico.

Educational projects with technology developed in Mexico suggest the selection, combination and use of technological means in a reflective and strategic way, considering the context. Hernandez Barcia, Morales & Rodríguez (2006), inquire about the transmission of the *telesecundaria*, or tele-school, through television. Its mission is to provide to the most vulnerable groups in the country with secondary education and improve their quality of life through educational spaces, materials, computer equipment, and the use of ICT.

Inequalities among indigenous and non-indigenous peoples regarding years of school have diminished considerably, as a result of the expansion of the educative systems in Latin America (Mier y Terán y Romero, 2003). Studies about education assessment for indigenous population suggest that there are challenges to overcome in the measurement and interpretation of academic results due to the diverse contexts and social disparities (Treviño, 2006).

According to important global organizations such as United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2002), how can true equality between the world populations be achieved to provide complete access to education? Educational technology is the primary tool to achieve innovative teaching-learning strategies for educators that are committed as change agents (Castro, 2008), it is necessary to produce more empirical research that promotes adequate alternatives to indigenous education.

On this regard, ICT plays a critical role in reducing the digital gap between, and increasing the inclusiveness and quality in education and community-centered curriculums. A debate arises: Is it possible to satisfy the intellectual needs of the global community?

This investigation is centered on a rural Huichol community in the high mountain area of Jalisco, Mexico, and a school located in the Western Metropolitan area of Mexico City. Moreover, the issue of cultural identity loss has a noticeable impact in the academic world. The general objective of this study between two cases is to establish of the preferred ICTs for these culturally diverse settlements. The panorama of the actors at private bilingual high school and the ones at a rural indigenous high school shed a wide range of possible findings. Specifically, the research centers on the students, teachers and principals in the 9<sup>th</sup> grade. In the first case a *telesecundaria*, a public secondary tele-school, a name in use since the transmission of televised classes in rural schools that are difficult to access. In the second case, a private bilingual school located in a wealthy area of Mexico City metropolis. The limitations for the development of this research were divergent, due to the wide distance between both settings.

The study is oriented to the practice and cultural significance of these educational actors within the context where they are taking place. Due to the relevance of analyzing an indigenous context, a non-government association participated in the completion of this investigation. In related research, Vergara et al. (2005) investigated within traditional Huichol Indian settlements in the north of Jalisco and regular schools with indigenous students in Guadalajara, it was found that schools have difficulties to apply intercultural education and as a result, there is a high rate of desertion. Further analysis is needed regarding the technological strategies that keep indigenous students active and enables them to overcome the difficulties of high school education.

## **Methodology**

A qualitative methodology was applied for the comparison of two cases to comprehend the interactions between people and their social reality (Álvarez-Gayou, 2003). Also, this research established a non-experimental, transactional, exploratory-descriptive design. Merriam (2009) describes the constructivist focus as one based on the significance that human beings give to their experiences and centers on how people construct their reality.

The study was conducted with the collaboration of a Non-Governmental Organization (NGO) to gain access to the Huichol community. The Huichol Indian community is spread throughout the Western states of Nayarit, Jalisco and Zacatecas in the Mexican Sierra Madre. The Huichol community is one of the few

pre-hispanic tribes that escaped Spanish Colonialism by hiding deep into the mountains.

The NGO by the name of *Conservacion Humana, A.C.* (Human Conservation, Citizens Association) has been overlooking the rights of the Huichol people for the last 20 years. Among their outstanding efforts have been the conservation of Huichol sacred sites and the biodiversity of endemic species such as the *peyote* cactus. One community that Humane Conservation holds close ties with is *Nueva Colonia*, in the municipality of Santa Catarina Cuexcomatitlan located in the upper Sierra Madre along the border between the states of Zacatecas and Jalisco.

The population selected for this research are the students, teachers, and principal of 9<sup>th</sup> grade in a private bilingual school in the municipality of Huixquilucan in the State of Mexico, and of a rural school in *Nueva Colonia*, in the municipality of Mezquitic, Jalisco, Mexico.

The sociodemographic characteristics of the group of the bilingual school are: high socio-economic level, English immersed students and access to ICT use. The sociodemographic features of the second group are: they are from Wirrarika (Huichol) ethnic group, they have a low socio-economic status, they are immersed in a miscegenation in which they which they require a Spanish certification, and develop ICT skills as part of their curriculum.

The inquiry instruments were the participant observation and in-depth interviews. The degrees of observation were full participation for the private school and moderate participation in the rural school. The instruments were validated through a pilot test applied to a small group of students, teachers and principals to ensure reliability. The interview questions were designed based on the research goals. The steps for its application were: obtain authorization from the schools, conduct dialogues with the interviewees, construction of a field diary, and application of the instruments and self-critical reflection (Valenzuela y Flores, 2012).

The results were compared and interpreted, it should be noted that the constant introspection of the process revealed the most significant findings in this comparative study.

## **Results**

Gaining access to a government sponsored tele-school was difficult, since they are placed in rural settlements. A first contact was made with a professor of a tele-school in San Simon Axixintla, in the state of Puebla. The teacher described how the pupils use IT programs to learn English as a Second Language. These students hold a particular predilection for software packages because they stay after school to access video games.

During another interview, Totupika Candelario, a Huichol Veterinarian from the National Autonomous University of Mexico commented that his daughter

studied at a junior high tele-school, run by the Huichol Council in Tenzompa, and even though they have computers, they do not work correctly. He proceeded to narrate that the tele-school has a shelter run by the National Commission for the Development of the Indigenous Nations, to facilitate the attendance of students that live in remote regions of the Sierra Madre Mountains. Mr. Totupika attended all levels available to a native Huichol community member. During the first school years, he learned in his native tongue and then started to learn the vocals and consonants in Spanish. He then was sent abroad to complete his studies at a tele-school. Finally, he moved to Mexico City to obtain his degree as a Veterinarian.

As mentioned before, the Humane Conservation Association is a NGO that aims to contribute and preserve the vast multi-cultural array of ancient knowledge held within the Native Cultures in the world, and in particular the Huichol Culture. One of the key associates is Xaureme Cosio, a Huichol teacher and respected community leader based in the sacred territory of Tuapurie in the highlands.

The results from both instruments were grouped into categories, according to the goals of this educational research. The categories are shown below, and include the most representative opinions of all participants from both groups, the Huichol community and private bilingual school.

**Educational Technology:** Kaplún (2005) describes the importance of the Web in contemporary education. The bandwidth and the Internet connection speed are a crucial factor for the proper implementation of IT. As made evident by the responses of the teachers and principal at the studied Huichol tele-school: “We need to improve the speed of connection to the Internet”, the participants commented to what they would like to change in their schools. It was evident that they had deficient access to the Web.

Currently, technology is constantly acquiring more value. One of the teachers referred that the students are so immersed in technology that they demand the use of it. As for the student’s opinion on this matter, they stated that they prefer the use of IT to study a second language. 70 % of the students responded that it is easier to learn with the use of technology, as noted in the observation “the students pay attention when the teacher acts as a facilitator while they are watching a video in English”.

**Tele-school:** During the first part of the investigation in the Huichol community the researcher conducted an observation in Nueva Colonia and the tele-school. Based on these observations, some information emerged from the classes of English, Spanish, Sports and Music. The principal and teachers provided information regarding their educational setting.

The original technological setup for the tele-secondary school used an antenna to receive televised educational content transmitted by EDUSAT network

produced by ILCE (Latin-american Institute of Educational Communication). This Institute contributes to the operation of the EDUSAT net since 1995, based on a cooperation agreement with the Secretariat of Public Education in Mexico. They are linked to the diverse modalities and different educational levels, the formation and actualization of teachers, long distance learning programs and use of the IT.

The original televised educational content is no longer available to the rural schools in the Huichol Sierra, it has been replaced by downloadable content from the web, but it is difficult to access it due to poor quality of the Internet signal.

**Equity in Education:** The access to education in both rural and urban contexts has increased thanks to different social and government programs. In the case of the Huichol community, there is a high rate of desertion from 7<sup>th</sup> to 9<sup>th</sup> grade, there are 35 students enrolled in 7<sup>th</sup> grade and in contrast, there are only 11 enrolled in 9<sup>th</sup> grade.

One of the teachers said that the parents have a feeling of being invaded by the mestizo culture. On this respect, they expressed that there are negative comments for people from the Huichol community who intend to live in the city.

On the other hand, the bilingual private school shows a constants number of enrolled students in all the level of secondary school, which reaches almost 100 students.

**Distance Learning:** Democratization of the access to education for multiple scarcity and underprivileged people is still being adapted to the current socio-historical situation in Mexico. De la Torre (2011) analyzed the new generation of learning strategies of a second language with computers and mobile devices, based on the recommendations of the European Institutions of the Common European Framework of Reference for Languages (CEFR) and the European Society for the Study of Huna Evolution (ESHE). Even though there are no such organizations in Mexico to establish a learning strategy for language learning, technology has reached Huichol students through the use of intelligent cellular phones that facilitate learning; here is where a linking bridge lies between the two studied populations. In both cases, students commented that they download applications to their phones to translate diverse languages.

Students from both groups stated that the most visited sites were Google Scholar, Wikipedia, Journals, and dictionaries. They tend to use Power Point presentations for Math and History, Other sites they visit with other purposes are social networks and Youtube.

**School Innovation:** In the society of knowledge, innovation is a key element to change the current paradigms. Salazar Asencio et al. (2014) state that yesterday's school was based in a society centered on family and work; today's schools are

centered on the right to education, and place the children on the center of the process.

The participant teachers comment that students and professors actually prefer to carry out the educational processes with the support of technology, and they consider that the main difficulty is the support from the institution. One of the participants commented about a foreign professor who abandoned the school due to administrative problems.

**Indigenous Education:** The results found in the field research conducted in the Huichol Sierra, prove that the model of the school for the indigenous is not substantiated, and grammar education is conducted in their maternal language (Huichol), but in the 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> grades are conducted by external teachers. In the mentioned levels, the teachers from setting 1 (Huichol) prohibit the Huichols to use their native language during classes, here lies a similitude with setting 2 (Mexico City) as the students of English as a Second Language are also banned from using Spanish during the lessons.

It was detected that the hidden curriculum is what rules and entails in the rural educational community (Snyder, 1970). A bi-cultural modality is contemplated and in the case of the Huichol school, a tri-cultural one takes place due to the introduction of English as a subject. It is interesting to note that according to the school teachers interviewed in the Sierra, they claim that English is easy to learn for the Huichol students since the use the *H* and *Y* is far more common in their native language than in Spanish.

**Multiculturalism:** Transcultural psychology (Treviño, 2006), contemplates a cultural relativism to relate the measuring of learning within indigenous contexts. Societies develop different intelligence types, they use diverse perspectives to learn and solve problems. Judgmental evaluation could bring to conclusions that portray the rural community in a pathological manner. Nevertheless, the concept of multiculturalism is revealed through IT, students and teachers are immersed in a digital culture. Technology is a multicultural media, and in this inquiry three cultures are merged: Huichol, Spanish and English.

**Second Language.** The current educational system instituted in Mexico, takes the two studied schools toward a bicultural curricular prototype. Spanish is designated as their maternal language and English as a second tongue (Plan de Estudios, 2011).

In this research, Spanish was taken as a second language in the case of the Wirrarika and English for the mestizo community. During the observation of the setting 1, the students were completely absorbed with interest for the English Language. 60 % of the interviewed Huichol students asked the researcher how and where he had learned English. Additional complementary studies are

recommended in autochthonous communities to get a much global vision of the panorama of IT in indigenous education.

The democratization of knowledge has overcome difficulties throughout the years, and there are still actions that can be made towards equity in ICT access. Although this study only focused on one Huichol community, more research is needed to obtain a global vision of technology in indigenous education, and to open a dialogue of multiculturalism. Alliances among non-government associations, national and international organization, are crucial to protect the cultural richness of ancient communities, and also to promote their inclusion in modern society.

### **Conclusions**

The democratization of knowledge has overcome difficulties throughout the years, and there are still actions that can be made towards equity in ICT access. Although this study only focused on one Huichol community, more research is needed to obtain a global vision of technology in indigenous education, and to open a dialogue of multiculturalism. Alliances among non-government associations, national and international organization, are crucial to protect the cultural richness of ancient communities, and also to promote their inclusion in modern society.

This qualitative study aimed to compare the preferences of technology use for learning a second language: Spanish for a Huichol community, and English for a private bilingual school. Similarities were found regarding how they carry out the educational processes of a foreign language, although the social setting and geographic context influence in the quality and equality of education.

Among the key findings are: The participants of the teaching-learning process tend to favor the use of technology to acquire a Second Language. As stated in the results and observe during the field work, students at a teenage age prefer to learn through different and interactive means. There are similarities in the preferred search engines between the two populations, as they are the same age and with similar interests.

A constant comment from the principals and professors is that the bandwidth and the speed of the Internet is crucial to strengthen the immersion into the culture of a second language. One of the deficiencies observed in the Huichol community is that their geographic condition and economic status hinders the access to technological resources and high quality connection.

The equity of education is hindered by school desertion, which is also a result of various factors such as socio-economic status, personal needs to work and abandon school. Educational innovation requires that similar investigations take place to foster a full performance in the society of knowledge.

The educational praxis in a multicultural classroom can offer information about the fundamental relationships inherent to cognitive development and the educational process. The results of this research show that the curriculum requires



a fundamental modification that permits an incorporation of a socio-cultural theory to help conceptualize the observed cultural differences and adapt a compatible model to their current requirements.

The main similarity between the two cases is the total preference by all the analyzed actors to the use of IT to study a second language. An ideal approach is the total immersion into an environment fitted with literature, music and other expressions that foster a teaching-learning process based in the culture of the second language that is being instructed. Collectivism as a cultural identity value is necessary for an effective intervention to the rural community schools, the responsibility to germinate ethno-theories that provide a true trans-cultural development.

## References

- Álvarez-Gayou, J. (2003). *Cómo hacer investigación cualitativa. Fundamentos y metodología*. México: Paidós.
- Castro, J. A. A. (2008). Tecnologías De Información: Inclusión en la educación basada en lo digital. *Revista Mexicana De Investigación Educativa*, 13(36), 223-246.
- De la Torre, M. J., (2011). La enseñanza-aprendizaje de la competencia oral en lengua extranjera en el contexto de la educación abierta y a distancia: de la casete a la interacción virtual. *Revista Iberoamericana De Educación a Distancia*, 14(1), 15-39.
- Hernández, C. S., Barcia, J. G., Morales, E. H., & Rodríguez, S. R. (2006). Integración educativa en México y—Enciclomedia. *Comunicación y pedagogía: Nuevas tecnologías y recursos didácticos*, (213), 70-76.
- Kaplún, G. (2005). Aprender y enseñar en tiempos de Internet. Formación profesional a distancia y nuevas tecnologías. *Montevideo: CINTERFOR/OIT*. Retrieved from: [http://www.oitcinterfor.org/sites/default/files/file\\_publicacion/kaplun.pdf](http://www.oitcinterfor.org/sites/default/files/file_publicacion/kaplun.pdf)
- Merrian, S.B. (2009). *Qualitative research. A guide to design and implementation*. San Francisco, CA, EE.UU.
- Mier y Terán, M. y Romero, C. (2003). Inequalities in Mexican children's schooling. *Journal of Comparative Family Studies*, 34(3), 435-454.
- Plan de estudios 2011 (2011). Educación Básica. Primera Edición, Dirección General de Desarrollo Curricular, Subsecretaría de Educación Básica de la Secretaría de Educación Pública. ISBN: 978-607-467-081-3.
- Ramírez, J. L. (2006). Las tecnologías de la información y de la comunicación en la educación en cuatro países Latinoamericanos. *Investigación temática. Revista Mexicana de Investigación Educativa*, 11(28), 61-90.

- Salazar Ascencio, J., Salazar Valenzuela, P., Hidalgo Standen, C., Villalobos Claveria, A., Marín Álvarez, P., Coloma Manrique, C., & Páez, R. Ó. (2014). Reflexión pedagógica y auto evaluación docente:¿ Simbiosis o depredación?.*RIEE. Revista Iberoamericana de Evaluación Educativa*.
- Snyder, B. R. (1970). *The hidden curriculum*. New York: Knopf.
- Treviño, E. (2006). Evaluación del Aprendizaje de los Estudiantes Indígenas en América Latina. Desafíos de medición e interpretación en contextos de diversidad cultural y desigualdad social. *Revista Mexicana de Investigación Educativa*, 11(28), 225- 268.
- UNESCO (2000). *Informe subregional de América Latina: Evaluación de educación para todos en el año 2000*, Santiago, Chile: OREALC.
- Valenzuela, J.R. y Flores, M. (2012) *Fundamentos de investigación educativa. Volumen 2 y 3*. (eBook). Monterrey, México: Editorial Digital Tecnológico de Monterrey.
- Vergara, M., de la Cruz, H., Alcázar, M., Hernández, A., Cortés, M. G., Ponce, V., & Carrillo, E. (2005). Condiciones y mejoramiento de la educación intercultural de los estudiantes indígenas, nahuas y huicholes de educación primaria. *REICE-Revista Electrónica Iberoamericana sobre Calidad, Eficacia y Cambio en Educación*, 3(1).

## Contacts

Raúl César Romero González  
Tecnologico de Monterrey  
raulcesar88@gmail.com

dr. Marcela Georgina Gómez Zermeño  
Tecnologico de Monterrey  
marcela.gomez@itesm.mx