

Environmental Science and Sustainable Development

DOI: 10.21625/essd.v7i1.864

Sustainability and diversity in the architecture of intercultural universities in Mexico

Peña Dalia¹, Mesquida Peri²¹Professor at the National Pedagogical University of Hidalgo, Mexico²Professor at Parana University, Brazil

Abstract

Intercultural universities in Mexico have been created since 2001, currently there are 12, the last one to be created is the Intercultural University of Baja California in San Quintin. These universities are governed by an intercultural model that states that they must incorporate linguistic expressions and manifestations and knowledge of indigenous peoples in their substantive functions as well as in their scientific activity, but some of them have also incorporated cultural and sustainable expressions in their architecture. In this sense, there are experiences of these universities that incorporate different cultural and sustainable elements in their architecture. Based on the above, this study presents some experiences of Intercultural Universities in Mexico that recover cultural and sustainable elements in their architecture. Methodologically, we resorted to reflexive ethnography by conducting several interviews with the architect of the UICEH. Some of the results obtained in the research show the importance of how, through the architectural spaces, elements of interculturality and sustainability are embodied, including some related to local cultures where the Universities have an impact.

© 2022 The Authors. Published by IEREK press. This is an open access article under the CC BY license (<https://creativecommons.org/licenses/by/4.0/>). Peer-review under responsibility of ESSD's International Scientific Committee of Reviewers.

Keywords

Intercultural universities; architecture; sustainability; interculturality

1. Introduction

The creation of Intercultural Universities was promoted by the General Coordination of Intercultural and Bilingual Education (CGEIB), the Undersecretary of Higher Education and the Secretaries of Education of the States, thus creating in 2001 the first Intercultural University; the Intercultural University of the State of Mexico (UIEM). (Schmelkes in Mato, 2008).

There are currently 12 Intercultural Universities ¹in Mexico; The Autonomous Indigenous University of Mexico, the Intercultural University of Chiapas, the Intercultural University of the State of Hidalgo, the Intercultural University of the State of Mexico, the Intercultural University of the State of Guerrero, the Intercultural University of the State of Puebla, the Intercultural University of the State of Michoacán, the Intercultural Mayan University of Quintana Roo, the Intercultural University of San Luis Potosí, the Intercultural University of Tabasco, the Intercultural University of Veracruz and currently in 2021 the Intercultural University of Baja California opened in San Quintín. ²

¹ At: <http://www.anui.org.mx/> (Revised October 5, 2021)

² <https://uibc.mx/index.php>

The Intercultural Universities are governed by an educational model that establishes the foundations of interculturality, proposing intercultural dialogue as "the possibility of promoting a process of dialogue and learning" (Casillas and Santini, 2009) and also promotes "the incorporation of linguistic expressions and manifestations of the cultures and knowledge of the indigenous peoples of the country, both in the substantive functions of the university and in its insertion in the fundamental corpus of its scientific activity.

These institutions³ share several characteristics among which are that they have low enrollments, share similar unconventional educational programs except for the Universidad Autónoma Indígena de México, consider a community linkage axis in their educational programs, incorporate the teaching-learning of indigenous languages, are located mainly in indigenous regions, promote the cultural and linguistic diversity of the regions where they have an impact⁴. In addition to these characteristics, these institutions also share what concerns the construction of spaces:

"From the perspective of the cultures of indigenous peoples, it is the duty of Intercultural Universities to promote the economic, cultural and social development of indigenous peoples, preserving their identity. For this purpose, lines of action are proposed that emphasize three axes: the use of materials and construction systems of the region in their facilities; the development of harmonious forms integrated to the landscape or to the traditional local architecture, and the projection in the design of the symbology and traditions of the indigenous peoples of the region" (Casillas and Santini, 2009)

It is worth mentioning that not all intercultural universities have followed this line of construction system using materials from the regions where they are located, nor the harmonic forms, nor the use of symbology, but there are some Intercultural Universities that share these approaches and have also incorporated the perspective of sustainability. In this sense, this work shows 5 Intercultural Universities that have incorporated intercultural and sustainable perspectives in their architecture. So the main objective of this work was to analyze the cultural and sustainability elements incorporated in the architectural spaces of the 5 Intercultural Universities in Mexico.

This research was built through different in-depth interviews (Taylor and Bogdan, 2000). In addition, different architectural designs provided by the architect of the UICEH were retrieved. So we resorted to reflective ethnography (Guber, 2001). Another technique that I used in this section and that was fundamental for the reconstruction of this research was ethnographic photography (Brandes S/F).

1. Literature Review

The relevance of the term "intercultural" in Latin America emerged in the 1990s, when various research and debates began to emerge from different approaches: social, anthropological, educational, political and promoted by different actors: academics, researchers, students, civil organizations, indigenous and Afro-descendant groups (López-Hurtado and Quiroz, 2007). Addressing the issue of interculturality is complex due to the diversity of studies currently existing not only in Latin America, but also in the world. In this sense, it is impossible to make an analysis that does not leave out some research, a reflection, a contribution, a challenge, etc., so here I will take up the discussions that I consider essential and that will allow me to identify positions, reflections and contributions on the subject.

Several studies in Latin America related to interculturality in Higher Education Institutions present interculturality experiences of conventional, Afro-descendant and indigenous Higher Education institutions, analysis from intercultural policy, conceptual discussions etc., (Mato, 2008, 2009, 2018; Ramirez, Manjarrez and Flores, 2013; Lopez, 2009; Tubino, 2005; Walsh, 2002; Fournet Betancourt, 1998 and Gasché, 2004 y 2014 among others).

³ Information obtained from my participation in the annual meetings of the UIS.

⁴ Information from participation in meetings of Intercultural Universities (UIS)

Now This section aims to provide an overview of the emergence of intercultural higher education in Mexico and the diversity of research that has emerged on the subject.

The San Andres dialogues of 1996, in which the various participants, such as bilingual teachers, civil organizations, academics and community leaders, made explicit the urgency of developing an intercultural education for all (Dietz, 2009) were a trigger to meet various demands, including educational ones, so in relation to these events the General Coordination of Intercultural and Bilingual Education (CGEIB) was created in 2001 to offer a culturally and linguistically relevant education to indigenous people at all levels (Schmelkes, 2008).

If we add to the above demands the data showing the inequity that has existed between the mestizo population and indigenous groups and the low percentages (2%) of access of this vulnerable population to higher education (Bertely, 2011), it is evident that there is an urgent need for higher education programs and institutions that cater to these populations. This is how intercultural higher education began to take shape in Mexico, with the creation of intercultural universities by the (General Coordination of Intercultural Bilingual Education (CGEIB), whose reasons, as Schmelkes mentions, were the following:

"(a) The low coverage of the indigenous population in higher education in general, and in public education in particular. The country's indigenous population represents 10% of the national population. However, it is estimated that barely 1% of higher education enrollment is indigenous. The National Education Program 2001-2006 recognized this inequality in the educational opportunities of the indigenous population and proposed tripling the enrollment of indigenous people at this educational level, as well as at the previous one (SEP, 2001). It was considered that the creation of intercultural universities, to be located in regions with a significant percentage of indigenous population, could contribute to the achievement of this goal by bringing the educational offer closer to the population that otherwise would not have access to it.

b) Indigenous demands. These demands have been escalating in such a way that they now incorporate not only access to basic education, but also to job training and higher education. The organized indigenous peoples have also qualified their demands, and have requested that this educational offer include the teaching of indigenous languages and be open to their own cultural contributions. c) The geographic imbalance of national development.

c) Geographical imbalance of national development. The regions where indigenous populations are concentrated are particularly disadvantaged, despite the fact that many of them are rich in natural resources. By training professionals, it was thought, universities can orient the educational offer and the training of their students towards the solution of regional problems and towards the promotion of the integral development of the region". (Schmelkes in Mato, 2008:312).

The creation of Intercultural Universities was promoted by the CGEIB, the Undersecretary of Higher Education of the Public Secretary and the state education secretaries, thus creating in 2001 the first Intercultural University; the Intercultural University of the State of Mexico (UIEM) with federal funding 80% and state budget 20% (ibid:314). To date, 12 intercultural universities have been created.

2. Methodology

Methodologically, we resorted to reflective ethnography (Guber, 2001) through which several interviews were conducted (Taylor and Bogdan, 2000) with the architect of the UICEH, which allowed an approach to the history of the construction of the University and to understand how the different proposals of interculturality and sustainability were reflected in the construction.

The unstructured interviews have a high degree of freedom and depth. "In this regard, Brimo (1972: 209) points out that an unstructured interview never relies on a list of questions established in relation to the order in which they are asked or the way they are asked, but rather on a freer conversation; the freedom will vary depending on the nature of the unstructured interview in question. (Tarrés, 2001:6)

I conducted more than 10 interviews with the architect of the UICEH, he was responsible for the construction of the University, so he provided me with the architectural plans and some photographs of other Intercultural Universities. The photographs were fundamental (Brandes S/F), the images of some constructions of the universities shown in this research are an important part of the project, the images of the constructions, the green and sustainable areas of the universities invite the reader to imagine beyond what the photograph itself represents.

"The key role of photography in exercising power remains in its possibility of allowing the intensive investigation of the Other ... According to Foucault, photography allows the viewing public "the possibility of ... classify and punish. It establishes upon the photographed a visibility by which they can be differentiated and judged." (Ibid:33)

The photographs of the Intercultural Universities, some provided by the architect and others recovered during the ethnographic work I carried out, allow me to visually understand the cultural and sustainability elements found in each construction.

After recording the interviews, we proceeded to the analysis of the data where we began to find that the architecture contained elements of both intercultural and sustainability conceptions, these conceptions were linked to the planning and architectural design.

Some of the results found in this research were that the architecture of the five Intercultural Universities recovers local elements of the cultures of incidence.

It was important to identify that universities such as the one in Hidalgo implemented eco-technologies in their construction, setting an example of sustainable and intercultural construction for other types of higher education institutions.

3. Case Studies

3.1. The Intercultural University of the State of Mexico (UIEM)

It began activities in September 2004, located in San Felipe del Progreso.⁵ It offers bachelor's degrees in Language and Culture, Bachelor's Degree in Sustainable Development, Bachelor's Degree in Intercultural Communication, Bachelor's Degree in Intercultural Health, Bachelor's Degree in Intercultural Art and Design, Bachelor's Degree in Nursing and a Master's Degree in Management of Rural⁶ Innovation.

Its construction is based on pre-Hispanic symbolism with materials from the region, diversity of styles and architectural elements that integrate the context and provide identity with the concept of interculturality. (Architect of the UICEH)

⁵ En <http://uiem.edomex.gob.mx/historia-uiem>

⁶ <http://uiem.edomex.gob.mx/posgrado>



Figure 1, UIEM Main Building

Source Architect of the UICEH

The construction of the university is full of fretwork and staircases that resemble those of a pyramid, surrounded by the stone serpent, the buildings have signs in indigenous languages.

"I traveled to several universities to see the constructions. The one in the State of Mexico for me is somewhat exaggerated, as well as a university Teotihuacan, it is saturated with pre-Hispanic symbolism, I do not think that all that symbolism is part of the identity of the students." (UICEH Architect Oscar Covarrubias, June 2019)

3.2. Intercultural University of Chiapas (UNICH)

The Intercultural University of Chiapas (UNICH), began its academic operations in 2005, in the city of San Cristobal de Las Casas.⁷

It currently has four academic units: UAM Oxchuc, UAM Las Margaritas, UAM YAJALÓN and UAM Valle de Tulijá. It offers bachelor's degrees in: Intercultural Communication, Intercultural Law, Sustainable Development, Language and Culture, Medical Surgeon and Alternative Tourism, Master's Degree in Intercultural Studies and Master's Degree in Social and Solidarity⁸ Economy.

It has an architectural concept based on the urban typology of the place (San Cristobal de las Casas), using traditional forms, textures and materials, integrating directly with its context. (UICEH Architect Oscar Covarrubias, June 2019).

⁷ <https://www.unich.edu.mx/san-cristobal/>

⁸ <https://www.unich.edu.mx/#>



Figure 2, Architecture of the Intercultural University of Chiapas

Source Architect of the UICEH

"In the construction of a building many factors are involved, the main one is economic, because it governs the designs, for example: many intercultural universities are type buildings of those built by the Institutes of Educational Infrastructure. An example is the university of Chiapas that tried to give it a little bit of identity with the urban image of San Cristóbal de las Casas, mud roofs, quarry boards, but what I identified in all the universities is the interaction with the indigenous languages, what they also baptized the buildings with names in indigenous languages". (Architect of the UICEH, June 2019)

3.3. Intercultural University of the State of Tabasco (UIET)

The Intercultural University of the State of Tabasco was created on April 5, 2006⁹. It has Academic Units in Vicente Guerrero and Villa Tamulte de las Sabanas. It offers bachelor's degrees in Intercultural Communication, Intercultural Law, Sustainable Rural Development, Tourism Development, Intercultural Nursing, Language and Culture and Intercultural Health.

Modules of buildings deployed in radial form, functionalism and use of materials from the region integrating with its environment. (UICEH Architect, June 2019).

⁹ <http://www.uiet.edu.mx/antecedentes.php>



Figure 3, Intercultural University of the State of Tabasco (UIET)

Source Architect of the UICEH

3.4. Intercultural Mayan University of the State of Quintana Roo (UIMQRO)

The University was created in 2006.¹⁰ It offers degrees in Language and Culture, Alternative Tourism, Municipal Management, Community Health, Arts Management and Development, Engineering in Agroecological Production Systems, Engineering in Information and Communication Technologies, Engineering in Business Development and a Master's Degree in Intercultural Education¹¹.

This university has also recovered the symbolism of the region, from the logo that can be found on the university's website to the construction of its buildings.



Figure 4, UIMQRO¹² logo.

¹⁰ <https://drive.google.com/file/d/1SLXJUomzLhla4ZAFXGhBF96WrsbvgI85/view>

¹¹ https://www.uimqroo.edu.mx/?menu=programas_educativos

¹² <http://www.uimqroo.edu.mx/> (Revised on February 7, 2020)

"The Mayan profile is, from the author's point of view, a representative icon of the Mayan culture. Based on those countless images made in stones and paintings, he takes it making it with simple and precise strokes similar to those used by the Mayan painters themselves. It thus represents the Mayan root. The position of the face. That the face is with the chin up, not only means that it is looking at the star in the hand, but also represents the yearning, the drive and the desire to move forward. The earring is a gear, symbol of technology and movement. The star. The author gives this symbol more than one meaning. In the first place, it represents laser beams, something that for him is one of the most important inventions of these times, and therefore the most advanced in technology. It also represents knowledge, mathematics and geography; hence the two squares and the four triangles. For the Mayas the four cardinal points were important, that is why it is a star with four points, Xaman, Nohol, Lak'in and Chik'in. In general, the symbol represents the sky, the cosmos, astronomy, and also astrology" (UIMQRO, 2020).

The UIMQRO has a building in the shape of a "zero" inspired by the Mayan culture and the vertices of the hurricane.

There is also the Kukuxklán building that in the front part ends with snake heads alluding to the pyramid of Kukuxklán. (Teacher of the UIMQRO)

There are distinctive Mayan culture badges for the bachelor's degrees that were selected by students and academics which are the following:

"Lic. en Lengua y Cultura Itsamnaj is the deity that symbolizes knowledge and wisdom. He is recognized as the inventor of writing". Bachelor in Alternative Tourism Kukulkan, is one of the creator gods of our world. It is accepted that he came to Yucatan from other lands. He is associated with the wind, the thunder and the sun".

These universities were a reference for the architect who was in charge of the construction of the Intercultural University of the State of Hidalgo (UICEH), which is presented below.

3.5. Intercultural University of the State of Hidalgo (UICEH)

The Intercultural University of the State of Hidalgo began its activities on September 3, 2012 under the model of intercultural universities in one of the regions of the state of Hidalgo where there is a large presence of indigenous population. According to the National Council for the Evaluation of Social Development Policy (CONEVAL) this area is considered highly marginalized and is known as "The Otomí-Tepehua region", located in the municipality of Tenango de Doria, Hidalgo, Mexico. The region has the presence of Otomí, Tepehua and Nahuatl indigenous groups.

The university's curriculum is based on language, sociocultural, linkage, disciplinary and methodological axes.

It currently offers bachelor's degrees in Alternative Tourism, Sustainable Development, Language and Culture, Sustainable Agricultural Production, Art and Digital Design, Intercultural Law and Nursing.

The UICEH incorporates elements of sustainability in its construction: The walls and steps are built with stone from the region, due to the type of climate in the region an eco-technology was also introduced to one of the buildings in the form of a siphon: cold air is brought in and cools the building and only work with the classrooms on the perimeter. There are also solar panels, more than 200, in the classroom module, saving 95% of energy.



Figure 5, Solar panels in classrooms Source

Source Obtained from the UICEH page

"The rector asked me to visit the page of the Earth University of Costa Rica and from there we got the ideas that the buildings should have rainwater collection, we have 1600 square meters of slab, all these rainwater contributions fall into a cistern and are reused for sanitary discharges, and sanitary discharges, we have two biodigesters of 7000 liters each where the processes are done, the problem is that we have no dining room, the idea is to reuse the bio-gas, store it and take it to the dining room and use it. Also because of the type of climate we have here we put an eco-technology to one of the buildings in a siphon way, cold air is put in and cools the building and only work with the classrooms on the perimeter and we have solar panels (UICEH architect, November 2018).

"Interculturality is linked to sustainability." (Former Rector, fieldwork June 2019).

Unfortunately due to lack of budget several eco-technologies were omitted:

"Well, within that heat, well in the building if the sustainability part works for us, unfortunately that sustainability is only in the first building of classrooms to give comfort to the students, we also for budget issue some eco-technologies were also omitted, but this, as you can see, here are all the diagrams, here is everything." (UICEH architect, 2018 fieldwork)

Sustainability is present throughout the construction:

"One of the main requirements is that we must be a sustainable institution, then from the beginning we were projecting this, capture and reuse of rainwater, uh, reuse of gray and treated water, use of biodigesters, to generate bio gas and use of sludge for fertilization and composting of land, natural ventilation, solar energy based on a solar cell system and the use of harmonious forms integrated

into the landscape, this, cultural significance, uh, well, more than anything was the integration of building elements of the indigenous cultures of the region, elements of traditional local architecture, symbols and environment". (Architect Oscar Covarrubias of the UICEH, fieldwork June 2018).

When one arrives at the UICEH by private or public car, one finds an institution full of colors and murals from the entrance.

To get from the entrance to the student module it is a one minute walk, through a corridor surrounded by grass and some small trees that have been planted in 2019. Already climbing the first stairs you get to see the student module that is located at the back and has tenangos painted on the facade of the entrance. Upon arrival, the visitor is confronted with a space that has glass doors, which allows observing an impressive landscape covered with vegetation of the mesophilic mountain forest.

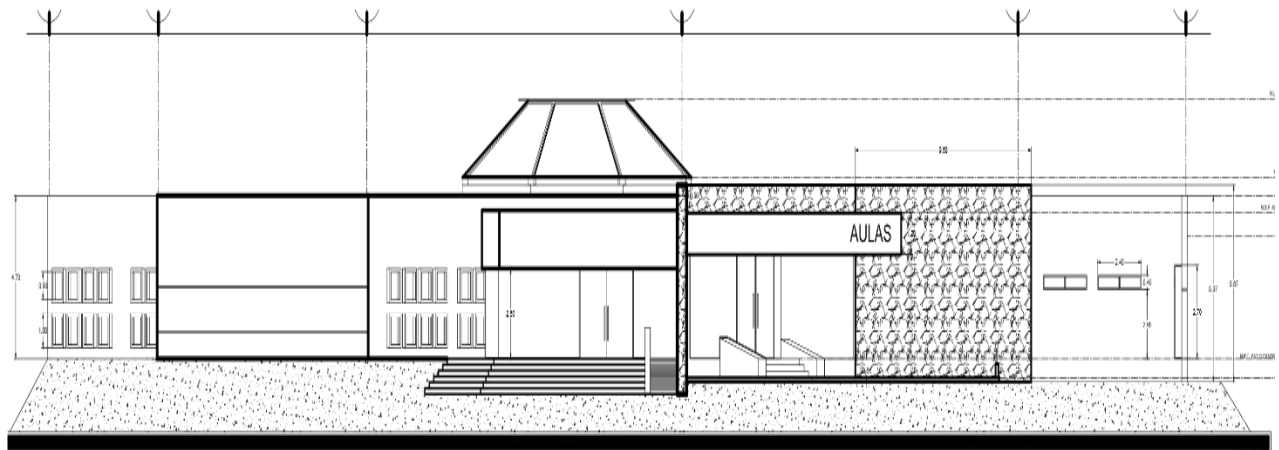


Figure 6, Student module

Source Provided by the UICEH architect

The student dome, where the classrooms are located, has a terrace with stained glass windows that allows you to enjoy a breathtaking view of the Sierra.

"So another of the requirements was that I wanted to have contact with the environment, we are friends of the environment, so that's why we have that amount of glass, of gates that from any point of the University, well the lobby and those that are corridors and common areas you can see outside, That's why there are big domes and big gates, because the truth is that there are some pictures and the one I really like is from the lobby of the classrooms, if you look towards the terrace you can see the Sierra, it looks impressive, and precisely because of those effects of fog, rain, sun, light, shadows, whatever you want". (Architect Oscar C. from UICEH, 2018)

Upon entering the students' dome it is observed that in the center there are plants and a huge stone, on the right side is provisionally the library and a computer classroom, this space initially in the architectural plan was indicated as the computer lab, but due to lack of resources it was divided into two spaces: library and computer lab, which became multifunctional spaces. Five meters from these, on the outside, there is a mural.

Entering from the left side you can see the men's and women's restrooms and a mosaic mural at the entrance, which represents a tree. The 12 classrooms are distributed in the space at the back, separated by corridors, each corridor has six classrooms.



Figure 7, Women's and men's restrooms and a mosaic mural at the entrance

Source Dalia Peña Islas

Inside this dome there is another mural that covers the entire wall, covering 3 complete classrooms. This mural was created by UICEH students.

On one side of the bathrooms there is an exhibition of traditional tools, with small texts created by students of the Sustainable Development degree program.

3.6. The planters inside the student and academic modules of the rectory

The planters that would be located in the center of the domes were also considered. The UICEH architect noted the following:

"I as an architect had another proposal, the planter should have a theme, the rector suggested it should be. "We could not put in copales, ahíles, very large vegetation and the most representative were the ferns and we put in three, unfortunately they have not been given much because the fern receives indirect light, grows under the trees and here is under the dome on that side we have to reinforce these planters. We did not have the planters at the beginning, that came from Dr. Kugel. In the upper module we found a rock and we left it as an ornament and it happened to be in the center of the planter". (Architect Oscar Covarrubias of the UICEH, field diary in 2018).

Part of the vegetation of the Otomí-Tepohua region is made up of ferns, a type of vegetation that is typical of the Mesophilic Forest and that was also contemplated as part of the design of the University. According to some conversations with the faculty, even the stone that the architect talks about in the talks I had with him takes up the silhouette of the mountain in front of the university:



Figure 8, Student dome planter

Source Dalia Peña Islas

4. Discussion

Intercultural universities have tried to incorporate the elements pointed out by the intercultural model of the university, these elements propose the dialogue of western and community knowledge in their curricula, educational practices and infrastructure.

The cases of intercultural universities presented in this paper reflect in their construction elements of sustainability and interculturality of the communities where they operate, including regional materials such as stone, vegetation and cultural elements such as signs in indigenous languages.

It is worth mentioning that despite these efforts of these institutions to incorporate these elements of both sustainability and interculturality, there are still challenges such as the need to generate diagnoses that incorporate the sustainable and intercultural visions of the inhabitants of these regions, getting involved in the processes and being part of these architectural designs from their vision, that is, incorporating their knowledge but not only from the external vision without consultation and direct participation.

It could be argued that within the perspectives of interculturality there are functional, relational and critical perspectives, as Walsh (2008) points out. The first two, according to the author, propose an interculturality that has worked for the State but has not considered the voices of the peoples, and does not analyze the power that has always existed of the dominant classes.

This is important to mention because in the case of intercultural universities they recover the relational perspective of interculturality, in some way recovering cultural and environmental elements of the communities, but they still have an enormous challenge because the indigenous populations have not been involved in the design of these institutions.

These practices of sustainability and interculturality incorporated in the infrastructure are the beginning of an innovative proposal from the intercultural universities that recovers cultural, linguistic and environmental practices of indigenous peoples, these proposals can even open the possibility of recovering materials that have ceased to be

used such as stone, adobe (a mixture of mud and straw with which the walls were made). These materials have been replaced by cement, which generates more pollution.

The architecture of intercultural universities with this vision can serve as examples for the recovery of knowledge about materials considered traditional in the construction of houses in the communities of incidence and that are no longer recognized by the new generations.

There is no doubt that these institutions present interesting visions of how historical, sustainable and cultural elements can be incorporated in their infrastructures, suggesting that these practices can be transferred to the so-called conventional universities, even assuming those challenges that the intercultural universities themselves still face in relation to the incorporation of people in the decision-making, design and evaluation processes of this type of projects.

Intercultural universities can be an example of innovative approaches on how to articulate the epistemic diversity of knowledge from their infrastructure, curriculum and educational practices.

Something important to mention about the difficulties for this type of architecture to be implemented in other educational institutions, at least in the case of Mexico, is the budget and the vision of those responsible for the educational architecture, that is, if an analysis is made of the architecture of other educational levels such as elementary or high school, the educational architecture does not present characteristics such as intercultural universities,

Something important to mention about the difficulties for this type of architecture to be implemented in other educational institutions, at least in the case of Mexico, is the budget and the vision of those responsible for the educational architecture, that is, if an analysis is made of the architecture of other educational levels such as elementary or high school, the educational architecture does not present characteristics such as those of intercultural universities.

This raises the need to incorporate intercultural education in the leaders responsible for educational infrastructure projects so that the importance of recovering both cultural and sustainable elements of the communities where the educational institutions will have an impact is taken into account.

5. Conclusions

The architecture of the five Intercultural Universities recovers local elements of the cultures of incidence. The UIEM recovers pre-Hispanic elements in its architecture and recovers signs in the indigenous languages of the local communities.

UNICH recovers traditional materials in its construction trying to give identity to the architecture with mud roofs, quarry boards and its interaction with indigenous languages.

The UIET, like the other Intercultural Universities, recovers materials from the region in its construction.

The architecture of the UIMQRO is inspired by the Mayan culture which it recovers in its buildings.

The UICEH incorporates cultural elements of the region and incorporates the category of sustainability in the architecture incorporating eco-techniques, materials from the region such as stone and vegetation. It also incorporated the collection and reuse of rainwater, reuse of gray and treated water, use of biodigesters to generate biogas and use of sludge for fertilization and composting of land, natural ventilation, solar energy based on solar cell system and use of harmonious forms integrated into the landscape was the integration of building elements of indigenous cultures of the region, elements of traditional local architecture, symbols and environment.

An essential characteristic of these five intercultural universities is the recovery of cultural and environmental elements of local cultures, recognizing their diversity and richness in the architectural designs.

This research shows how, through the architecture of the five universities studied, elements of local cultures and elements of sustainability are recovered. It is important to recognize how the vision of these intercultural universities tries to adhere to the visions of the indigenous peoples where they have an impact.

The visual elements offered by this type of construction are not only beautiful in the eyes of students, teachers and staff working there, but also recognize the importance of the materials used in the communities where they operate, as in the case of Hidalgo, which recovers stone from the region.

Few studies were found that show how, through architecture, elements of interculturality and sustainability are embodied, so this work is considered important as a reference for further research on the subject.

References

- Brandes, S.,(S/F). La fotografía etnográfica como medio de comunicación. Universidad de California, Berkeley
- Casillas, L., y Santini L. Universidad Intercultural. Modelo Educativo. CGEIB. México, D.F. 2009
- Fornet-Betancourt. La filosofía intercultural", in: DUSSEL, Enrique Eduardo MENDIETA-Carmen BOHÓRQUEZ (eds.), El pensamiento filosófico latinoamericano, del Caribe y "latino" (1300-2000). Historia, corrientes, temas, filósofos, CREA/Siglo XXI, Mexico 2009, 639-646.1998.
- Gasché, J. "Fracaso y éxitos de una propuesta educativa intercultural concebida y aplicada en América Latina y basada sobre el Método Inductivo Intercultural". In Hernández, Ramírez, Manjarrez and Flores (coordinators).2013.
- Gasché, J. "Niños, maestros, comuneros y escritos antropológicos como fuentes de contenidos indígenas escolares y la actividad como punto de partida de los procesos pedagógicos interculturales: un modelo sintáctico de cultura". In: J. Gasché, M. Bertely and R. Podesta (Eds.) Educando en la diversidad. Intercultural and bilingual educational research and experiences. Mexico: Paidós.2004
- Guber, R. La etnografía, método, campo y reflexividad/ Bogotá: Grupo Editorial, Norma, 2001. 146p.; 18 cm- -(Enciclopedia latinoamericana de sociocultura y comunicación) ISBN 958-04-6154-6. Ethnology 2. Social anthropology. Investigations I. Tít. II. Serie 305.8 cd 20 ed. First edition: April 2001.Grupo Editorial Norma.2001
- Intercultural Mayan University of Quintana Roo (UIMQRO) in: <https://www.uimqroo.edu.mx/>
- Intercultural University of Baja California in San Quintín at: <https://uibc.mx/index.php>
- Intercultural University of Chiapas (UNICH) at: <https://www.unich.edu.mx/>
- Intercultural University of the State of Hidalgo (UICEH) at: <http://uiceh.edu.mx/>
- Intercultural University of the State of Mexico (UIEM) at: <http://posgrado.uiem.edu.mx/posgrado/>
- Intercultural University of the State of Tabasco (Universidad Intercultural del Estado de Tabasco) at: <http://www.uit.edu.mx/>
- López, L. Interculturalidad, educación y ciudadanía perspectivas latinoamericanas Plural editores. La Paz Bolivia.2009
- Mato, D. Educación Superior por/para/ con pueblos indígenas: la situación en los países del Mercosur comparada con otras regiones de América Latina y el mundo. Universidad Nacional de Misiones, Argentina.2018
- Mato, D. "Diversidad cultural e interculturalidad en educación superior. Problemas, retos oportunidades y experiencias en América Latina". Bogotá: IESALC-UNESCO.2008
- Mato, D.,(Coord.) Instituciones Interculturales de Educación Superior en América Latina. Procesos de construcción. Logros, Innovaciones y Desafíos. Caracas: UNESCO-IESALC.2009
- Asociación Nacional de Universidades Interculturales (ANUI) at: <http://www.anui.org.mx/>
- Ramírez, M. "Educación intercultural entre tensiones y distensiones: una mirada desde el contexto venezolano" in Hernández, Ramírez, Manjarrez and Flores (coordinators).Educación intercultural a nivel superior: reflexiones desde diversas realidades latinoamericanas UIEP/ UCIRED/ UPEL, Mexico, 380 pp.2013.
- Schmelkes, S. Creación y desarrollo inicial de las universidades interculturales en México: problemas, oportunidades, retos. En D. Mato (Coord.), Diversidad Cultural e Interculturalidad en Educación Superior: experiencias en América Latina (pp. 329-337). Caracas: UNESCO-IESALC.2008
- Tarrés, Ma. L. Observar, escuchar y comprender sobre la tradición cualitativa en la investigación social. Facultad Latinoamericana de Ciencias Sociales Sede México. El Colegio de México.2001
- Taylor, S., y Bogdan ,R. Introducción a los métodos cualitativos de investigación. Ediciones Paidós, tercera edición.2000
- Tubino, F. "La interculturalidad crítica como proyecto ético-político", In: Encuentro continental de educadores agustinos. Lima, January 24-28, 2005. Available at: <http://oala.villanova.edu/congresos/educación/lima-ponen-02.html.2005>
- Walsh, C.,(2002). Interculturalidad y política: desafíos y posibilidades. Norma Fuller editora, Universidad del Pacífico.Walsh, C.,(2002 y 2012). Gasché, J., 2008b; Bertely M., (2007 y 2013) en Sartorello S. (2019). Milpas Educativas para el Buen Vivir. Nuestra cosecha. Impreso en México por Ultradigital Press Centeno 195, Valle del Sur