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IMPLEMENTATION OF PARTICIPATORY COCOA SELECTION METHODOLOGY IN TECPATÁN, CHIAPAS, MEXICO

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ABSTRAC

Cocoa farming is of great importance for Mexico as this is where it was domesticated as a crop and since pre-Hispanic times has been linked to its culture. It is also the primary source of income for families in the states of Chiapas and Tabasco. There is a great diversity of samples in the country, which is due to the native species as well as the foreign examples that have entered through diverse routes. This has led to samples with different morphological, productive, and quality characteristics. It is for this reason that through the participatory selection methodology in the municipality of Tecpatán, Chiapas, it was intended to identify and select samples of cocoa that have the salient features of quality and productivity. Fifteen producers in five towns participated in the effort, which resulted in the identification and study of 47 trees. On these samples, a description was elaborated using 14 characteristics of the flower, 13 characteristics of the fruit, 7 of the seeds and 5 of the leaves, seed index indicators, pod index, and estimated annual production. It was found that trees # 265, 269, 262, 244, 256 and 233 meet the criteria established for high performance and quality, accounting for 12.7% of the trees that were studied. This indicates strong a potential presented by this region with respect to cocoa samples with high productive potential.

Keywords: *interculturalism, dialogue about knowledge, education, human resources, institutions of higher education.*

It is believed that cocoa (Theobroma cacao L.) originated in the headwaters of the Amazon Basin and in ancient times a natural population of Theobroma cacao spread throughout the central part of the Amazon-Guiana area to the west and north, reaching southern Mexico. These two populations were developed in geographically separated regions by the Isthmus of Panama. The first of these was the group called Forastero - Amazonica (Foreign-Amazonian) and the second group called Criollo(Native), which is well accepted in the market due to its high organoleptic quality (Foniap., 1993, Moreno, L. et al, 1983; Ruiz , 2003; Castillo, 2003).

Today this tree is grown commercially in Asia and Oceania, Central and South America and Africa, with global participation with respect to production at 12.5%, 12.7 and 74.8% respectively. Most of the cocoa destined for international trade is grown in Africa, with the Ivory Coast as the largest producer and Ghana having the highest quality (International Cocoa Organization - ICCO, 2011).

For Mexico cocoa is more than a food product-it represents a tradition, a great cultural legacy to preserve, a great source of natural wealth and a source of employment. Presently they are 61385.98 ha planted and in production located in four states, generating more than eight million work hours a year, with a contribution of 27,619.11 tons. The average reported for 2012 was 450 kg / ha (SIAP, 2014).

Cocoa cultivation in Mexico has been mainly driven by small producers who rely almost exclusively on family labor to work the plantations. They have low levels of education and low economic capacity to reinvest in their plantations.

Low yields of the current cocoa production in Mexico are largely due to the presence of plantations over 40 years old, low yielding genetic, susceptibility to pests and diseases, low or nil management culture, and the presence of a large diversity of phyto-sanitary problems.

This gradual decline in production has led to a crisis directly affecting more than 50,000 families, which has increased poverty in these communities which are already depressed. This has accelerated migration, further environmental degradation by the demolition of the plantations, and expanded the shortage for the Mexican chocolate industry which has to import cocoa beans from other countries.

In the case of the two major cocoa producing states, the plantations belong to the basins of two of the most important rivers in Mexico: the Grijalva and Usumacinta. Given the high impact of disease, farmers in the midst of despair for not having production and therefore income, are opting for the demolition of the plantations to change crops, mainly for grassland and maize. This in turn is threatening the capture and buffer systems and the reserves that cocoa farms represent which include the diversity of shade trees, thus creating an environmental problem with serious consequences.

The lack of technology implemented in plantations, diseases and pests that attack the crop, the advanced age of older cocoa plantations and the cultivation of low quality and high heterogeneity genetic materials, are the main factors affecting production.

However, cocoa is of high social and ecological importance. In the state of Tabasco this crop supports 40,000 families in 368 communities, while in Chiapas 11,000 families in 118 communities depend on this crop as their source of income. From the agro-ecological point of view, cocoa has a high value as a provider of ecosystem services because its cultivation fosters biodiversity and contributes to the conservation of natural basins. The cocoa agro-ecosystem resembles tropical forest in structure and function and nourishes the life of rivers and streams, providing water for human and animal consumption, irrigation, hydropower generation and the maintenance of biodiversity of flora and fauna.   Therefore, it contributes to the sustainability of the tropical regions of Mexico and the world, which is threatened by the gradual demolition of

cocoa plantations. In addition, cocoa plantations play an important role in mitigating the effects of global warming and climate change. A plantation (cocoa + shadow) can store 60-100 tons of carbon / ha. in the aerial biomass.

THE GENETIC IMPROVEMENT OF COCOA

The genetic improvement of this species is one of the most promising strategies to improve the performance of cocoa plantations, and as a result the producer's income. In Latin America, there has been development in the improvement of this species for nearly 80 years, basically by the application of two methods: 1) vegetative or cloning selection and 2) generative selection based on artificial hybridization between clones.

The basis of vegetative selection arose in Trinidad in the 30's (Pound, 1931; Pound, 1934), and consists of the individual selection of trees in commercial plantations or in the wild, on the criteria of its fruit and seed characteristics, as well as identifying its resistance to disease. Two items are defined from the selection: the cob index which expresses the number of cobs needed to make a kilogram of dried cocoa, and the seed index which indicates the dry weight of the seed. Each country adapted these parameters to the local population, and thus was gradually selecting a considerable amount of clones.

In Mexico, the genetic improvement of cacao based on clonal selection began in 1945 at the Research Station on Tropical Crops, today called Experimental Field Station Rosario Izapa of the National Institute of Agriculture, Forestry, and Livestock Investigations (INIFAP) located in Tuxtla Chico , Chiapas (López, Fraire and Cueto, 1994; López, 1995; Cueto and Lopez, 2005). As in other countries, the potential of clonal material has not taken advantage of- the impacts and benefits of these clones among producers have been limited despite the efforts for dissemination.

Very few plantations have been established with this material due to the limited acceptance by farmers.

A well-known fact is that breeding developed in research centers is disconnected from producers, the technological demands of the productive sector, and industrial and market demands.

Participative improvement consists of taking advantage of the natural variability in the cocoa plantations and through a combination of selection criteria together with the involvement of producers, identify and select highly productive trees and high quality seeds(Engels and Eskes, 2009) . This strategy allows for the selection of genotypes that are a product of domestication in environments and local communities, differentiated by their origin, quality and flavor, and adapted to particular environments (López and Ramírez, 2006). Unlike other strategies in which the producer is not involved and it is a mere spectator, in participatory selection they play an important role for the identification, the definition of variables and criteria, and the rating in the selection of elite trees.

The process of tree selection is made according to the following work methodology:

- Exchange with producers, defining of selection criteria.
- Site visits to plantations with producers, marking of trees.
- On-site assessment for at least one harvest cycle: every 15 to 30 days depending on production periods. Variables of selected trees are recorded and healthy cobs are harvested and studied.
- Evaluation and final selection involving producers.
- Vegetative propagation of elite trees, establishment of plant material in local clone banks and dissemination of clones to producers.

The participatory improvement methodology has produced good results in the cultivation of cocoa. In Mexico this strategy was first implemented by Cocoa Program at the Autonomous University

of Chiapas (UNACH) in 2000. The work began in the Soconusco region in the communities of Raymundo Enriquez and Miguel Hidalgo in Tapachula, Chiapas. This formed the basis of the methodology and generated indicators. Later this type of work was in other communities in the municipality of Tapachula and in the municipalities of Tuzantán, Ostuacán and Pichucalco (Lopez et al., 2006). The significance of applying this methodology lies in the selection of materials based on agronomic criteria of quality and disease resistance within a given area, so that locally adapted and accepted materials are obtained, which are the basis for the redesign of the local cocoa plantations having a high yield cacao in a short period of time and generating better earnings for producers, thus encouraging the cultivation and protection of the environment.

Based on this background, the purpose of this investigation was to exploit the variability present in cocoa communities in the township of Tecpatán. In order to obtain cocoa samples with high performance and quality, the methodology of implementing participatory selection was an important basis for the establishment of sustainable cocoa, which helps improve profitability and environmental preservation.

METHODOLOGY

The selection process only included trees in the period from October 2012 to April 2014 and was performed according to the following guidelines:

a. Exchange with producers, definition of selection criteria.
b. Tours of plantations with producers. Marking of trees. During trips, sampling of fruits and seeds of the indicated trees.
c. Site evaluation of each tree and the characterization of agronomic variables.

d. Evaluation and final selection.

The characterization and data collection were performed according to the methodology established by CATIE (Phillis-Mora, et al, 2012), which features 14 flower, 13 fruit 13, 7 seed and 5 leaf characteristics as quality indicators.

Agronomic characteristics. These variables were performed by taking data on the number of fruits of each tree and cutting the fruits, leaves and flowers, from each tree. The material was transferred to the ADUES Cocoa-Chocolate Agrotechnology Laboratory , located at the University City of the Autonomous University of Chiapas (Tuxtla Gutiérrez, Chiapas), in order to record the respective data according to the following list:

Fruit characteristics: healthy samples were harvested, weighed, length, diameter, number and types of rows, number of seeds per fruit, the weight of fresh and dry seeds, immature and mature color, the presence of pigmentation in the loins, shape & texture of the surface. Information for calculating the cob index (number of cobs per kg) and the selection limit was equal to or less than 25.

Seed: color of cotyledons, shape, length, width, thickness, dry weight, husk or seed coat content (%). These values generated the seed index (number of dry seed per kg), and the selection criterion for this character was set equal to or greater than a gram, and that their number per kg is less than 1000.

Flowers: Stamen length (cm), number of ovules per ovary, ovarian length in mm , ovary width (mm), length of sepal (mm), sepal width (mm), length of petal ligule (mm), width of ligule (mm), length of style (mm), color of flower stem; presence of anthocyanin in the flower bud, in the petal ligule, and in the upper ovary and in the stamen.

Plant: Plant height, number of flower cushions in a linear meter of trunk.

Leaves: Color of the tender shoot, leaf width (cm), leaf length (cm), petiole length (cm), length from base to widest point.

Selection limits: considering the relevance of productive variables, selection limits were set with the following values:

- Performance: at least 1 kg of dry cocoa per year.
- Cob index: equal to or less than 25 cobs per kg of dry cocoa.
- Seed index: equal to or greater than 1 g.

RESULTS AND DISCUSSION

Exchange with producers and definition of selection criteria. As part of the development of the investigation, a meeting took place with the directors and associates of the Tecpateco Society of Rural Cacao Production. The project was presented to the group and the objectives were laid out. There was also a call for producers who were interested in participating in the project.

Site visits to plantations with producers; marking of trees. A plan of the route of plantations visits was established as part of a common agreement with the producers, and trees were marked which were considered important as part of the study. In this manner 15 farmers participated from five different localities of the municipality of Tecpatán, who studied and marked 47 trees.

In situ evaluation of each tree with agronomic variables. There were periodic tours of the marked trees in order to collect data and samples such as leaves, fruits and flowers which were transferred to the Agro technology Laboratory to be used in the study.

Figure 1. Morphological characteristics of tree 243, selected by the methodology of participatory selection in Tecpatán, Chiapas, Mexico. a. Tree, b. Flower c. Fruit, d. Seed, e. mature leaf, f. young leaves.

In Figure 1. The morphological characteristics of one of the trees that formed part of the study can be appreciated, from which data variables were taken from young and mature leaves, fruit, seeds and flowers, in order to identify and differentiate the particularities of each of the selected materials among themselves and with others.

EVALUATION AND FINAL SELECTION

In Table 1., the data of morphological characteristics and evaluated indicators from 14 outstanding cacao trees studied using the methodology of Participatory Selection is concentrated. Differences were observed in the variables of the flowers: stamen size, number of eggs per ovary, length of ovary, ovary width, sepal length, length of ligule and length of style.

With respect to the characteristics of the fruit, trees were found to have variables with respect to fruit shape, apex shape, roughness of the skin as well as fruit weight. The variable of the number of seeds per fruit shows that it has a range of values of 16-48 seeds; individual seed weight showed values between 0.9 to 1.7 g, and a dry cocoa weight on a cob ranging between 28.4 and 71.2 g.

In considering the selection limit established for the pod index, whose value was equal to or less than 25, the trees that meet these criteria were numbers 133, 144, 153, 156, 160, 162, 165, 166 and 169. However, for the seed index the trees that met these criteria were numbers 133, 243, 144, 153, 156, 295, 160, 216, 162, 165, 166, 169 and 170.

While considering the variable of production, the trees that achieved higher values above 1000 g / year were numbers 165, 243, 169, 162, 244, 295, 166, 141 and 133.

Trees 165, 169, 162, 144, 295 and 133 met the selection criteria that were set, that is to say 12.7% of the trees which were studied. This indicated a good potential presented by this area with respect to cocoa materials with high productive potential.

Selection is one of the oldest methods and is the basis of all plant breeding program. According to Gallais (1989), it is a process that can be applied to a given population to identify the best plants. Its efficiency is higher in populations with wide genetic variability.

One of the major limitations for the recovery of Mexican cocoa production is the lack of improved genetic material adapted to the environmental conditions of the producing regions. This has limited the impact of support programs implemented for the cocoa industry by the federal and state governments.

The results obtained in this investigation, while they are important inputs for producers, presented prospects for applying selection strategies in existing plantations aimed at obtaining germplasm in a relatively short time with outstanding features

and adapted to production regions. Thus, this genetic improvement strategy helps to support the recovery of the cocoa sector of Mexico.

The lack of improved cocoa germplasm is a world-class problem that has previously been noted by several authors (Larson, 1986; Enriquez and Soria, 1996, Lopez et al, 1996;. Zadoks, 1996; Van Der Vossen, 1996) who point out that a limitation in most cocoa producing regions is the lack of improved high yield and disease resistant varieties that adapted to the conditions of the various production regions. One strategy to overcome this limitation in a short time is participatory improvement which is proposed by López and Ramírez (2006). They have proposed the selection of germplasm from the plantations of the producers as one of the most promising avenues for obtaining genetically superior material that allows increased yields in cocoa regions.

The selection of outstanding trees in polymorphic plantations complemented with vegetative propagation would allow clones high agronomic value to develop in a short time, allowing their immediate use by producers.

The results obtained in this investigation confirm the efficiency of this breeding strategy, since the selection has allowed the identification and selection of notable trees that show a high productive potential.

From the perspective of the sustainability of the cocoa agro ecosystems, the direct selection of materials involving both producers and breeders is a potential strategy for increasing productivity of agro ecosystems and promoting the maintenance of genetic diversity for the production regions of Chiapas and Tabasco.

The selected genetic material that was a product of this investigation can be used in two ways. In a first phase, they can be multiplied by grafting and utilized directly by a producer for the renovation of existing plantations. At a later time they may be used as parents for the creation of inter clonal hybrids. Under this approach, the genetic material selected in this investigation constitutes basic material to start a hybridization project that would

generate segregated populations directed to where the combination of different characters of agronomic interest is favored.

Table 1. Characteristics of trees selected by the methodology of participatory selection in the town of Tecpatán, Chiapas, Mexico.

Selection Number	133	141	243	144	153	156	295	160	216	162	165	166	169	170
FLOWER CHARACTERISTICS														
Color of the flowers peduncle	Green with red pigment	Green	Green with red pigment	Green	Green	Green	Green with red pigment	Green with red pigment	Green with red pigment	Green	Green with red pigment	Green with red pigment	Green with red pigment	Red
Presence of anthocyanin in the flower bud	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Lightly pigmented	Absent
Presence of anthocyanin in the petal ligule	Lightly pigmented	Lightly pigmented	Lightly pigmented	Lightly pigmented	Lightly pigmented	Lightly pigmented	Absent	Absent	Absent	Absent	Absent	Lightly pigmented	Absent	Absent
Presence of anthocyanin in the superior part of the ovary	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
Stamen size / length in cm	5.71 ± 0.67	3.08 ± 0.41	8.06 ± 0.68	7.57 ± 0.44	7.75 ± 0.4	7.49 ±0.47	6.94 ± 0.41	6.43 ±0.71	7.14 ± 0.44	6.87 ± 0.57	6.14 ± 0.40	7.65 ± 0.48	7.33 ± 0.55	6.63 ± 0.67
Presence of anthocyanin in the stamen	Intense	Intense	Intense	Intense	Intense	Intense	Intense	Intense	Intense	Intense	Intense	Intense	Intense	Intense
Number of eggs per ovary	26.85 ± 2.70	13.4 ± 2.82	34.15 ± 3.29	35.05 ± 3.17	34.6 ± 3.54	38.15 ± 2.43	35.05 ± 4.03	35.55 ± 4.59	34.4 ± 3.81	34.05 ±3.11	32.2 ± 2.62	31.8 ± 2.01	32.75 ±3.14	33.35 ± 2.85
Length of ovary (mm)	1.49 ± 0.34	1.00 ± 1.35	1.74 ± 0.31	1.68 ±0.33	1.38 ± 0.08	1.52 ± 0.21	1.33 ± 0.09	1.37± 0.48	1.37± 0.16	1.37 ± 0.22	1.45 ± 0.23	2.02 ± 0.04	1.09 ± 0.09	1.97 ± 0.34
Width of ovary (mm)	0.85± 0.08	0.61 ± 0.48	1.12 ± 0.10	1.16 ± 0.09	1.14 ± 0.07	1.15	1.02 ± 0.04	1.08 ± 0.22	1 ± 0	1.05 ± 0.06	1.06± 0.07	1.08 ± 0.10	1.07 ± 0.09	1.18± 0.08
Length of sepal (mm)	5.73 ± 0.48	3.4 ± 0.53	8.47 ± 0.49	8.73 ± 0.63	8.4 ± 0.50	8.41 ± 0.49	8.51 ± 0.52	7.36 ± 0.45	8.67 ± 0.56	7.83 ± 0.53	7.19 ± 0.54	7.92 ± 0.54	7.5 ±0.68	7.11 ± 0.55
Width of sepal (mm)	1.77 ± 0.360	0.94 ± 0.26	2.14 ± 0.09	2.26 ±0.34	2.27 ± 0.04	2.22 ± 0.07	2.02 ± 0.06	2.05 ± 0.10	2.09 ±0.10	2.07 ± 0.08	2.04 ± 0.05	2.2 ± 0.41	2.05 ± 0.22	2.75 ± 0.51
Length of sepal ligule (mm)	3.1 ± 0.51	2.2 ± 0.53	4.82 ± 0.37	4.71 ± 0.34	5.10 ± 0.13	4.9 ± 0.30	3.30 ± 0.50	4.01 ± 0.90	3.86 ±0.41	3.83 ± 0.62	3.24 ±0.57	2.97 ±0.11	3.03 ± 0.07	3.35 ± 0.67
Width of ligule (mm)	2.215 ± 0.57	1.025 ± 0.36	2.62 ± 0.39	2.65 ± 0.35	3.14 ± 0.09	3.11 ±0.10	2.5 ± 0.43	2.41 ± 0.45	2.76 ±0.34	2.75 ± 0.34	2.25 ± 0.36	2 ± 0	2.9 ± 0.30	2.24 ± 0.39
Length of style (mm)	0.97 ± 0.07	0.55 ± 0.05	1.45 ± 0.07	1.44 ± 0.06	1.4 ± 0.05	1.48 ± 0.07	1.41 ± 0.09	1.26 ± 0.11	1.425± 0.08	1.36 ± 0.08	1.37 ± 0.08	1.11 ± 0.11	1.195 ± 0.06	1.35 ± 0.17
FRUIT CHARACTERISTICS														
Color of immature fruit (2 months)	Light green with white gooves	Light green with white gooves	Light green with white gooves	Light green with white gooves	Green with purple	Green with purple	Light green with white gooves	Light green with white gooves	Light green with white gooves	Light green with white gooves	Light green with white gooves	Light green with white gooves	Green	Red
Color of mature fruit	Yellow	Yellow	Yellow	Yellow	Yellow	Red with yellow	Yellow	Yellow	Green with yellow	Yellow with green	Yellow with green	Yellow	Yellow	Yellow
Fruit shape	Angoleta	Pentagon	Pentagon	Angoleta	Angoleta	Angoleta	Amelonado	Angoleta	Angoleta	Angoleta	Angoleta	Amelonado	Cundeamor	Cundeamor
Apex shape	Acute	Obtuse	Obtuse	Obtuse	Obtuse	Acute	Obtuse	Attenuated	Attenuated	Attenuated	Acute	Round	Obtuse	acute

Shape of basal constriction	Intermediate	Intermediate	Intermediate	Intermediate	Absent	Strong	Soft	Intermediate	Strong	Strong	Intermediate	Soft	Soft	soft
Skin wrinkle	Intermediate	Soft	Intermediate	Intermediate	Soft	Intermediate	Soft	Intermediate	Rough	Rough	Intermediate	Soft	Intermediate	soft
Weight (g)	950.3	701.3	557.9	505.7	704.0	763.5	361.7	398.0	533.0	658.3	620.8	571.7	737.5	818.8
Length (cm)	21.0	17.8	17.7	17.6	18.5	23.3	17.0	20.0	24.0	22.0	20.7	14.5	20.5	23.0
Diameter (cm)	10.3	9.5	8.9	8.7	9.0	8.8	7.5	7.0	8.0	8.7	8.8	9.5	8.7	9.0
Ratio L/D (cm)	2.0	1.9	2.0	2.0	2.1	2.7	2.3	2.9	3.0	2.5	2.4	1.5	2.4	2.6
Ridge thickness (cm)	2.2	1.8	1.9	1.5	1.5	1.9	1.1	0.8	1.5	1.8	1.5	2.0	1.9	2.0
Groove depth (cm)	1.7	1.4	1.4	1.2	1.3	1.5	0.9	0.7	0.9	1.1	0.9	1.5	1.3	1.6
Fresh weight per fruit (g)	131.3	84.0	95.3	114.9	194.0	177.0	100.7	140.0	60.0	113.7	123.8	117.3	143.0	110.0
SEED CHARACTERISTICS														
Number of seeds per fruit	39.3	32.7	32.3	39.8	48.0	42.0	27.3	42.0	16.0	27.3	41.8	37.0	36.0	16.8
Seed weight with testa (g)	1.2	0.9	1.2	1.0	1.5	1.5	1.1	1.3	1.8	1.7	1.4	1.2	1.3	2.1
Dry cocoa weight per cob (g)	47.0	30.8	38.7	41.4	71.2	62.4	29.5	53.4	28.4	45.2	58.2	42.9	48.5	34.5
Percentage of flesh	10.0	25.1	11.9	8.8	7.6	7.1	16.4	9.7	7.3	7.2	9.8	8.5	9.2	
Length (cm)	2.1	1.9	2.3	2.1	2.1	2.2	2.0	2.1	2.2	2.2	2.4	218.2	2.1	2.2
Diameter (cm)	1.1	1.0	1.1	1.1	1.1	1.2	1.1	1.1	1.2	1.2	1.1	119.7	1.2	1.3
Thickness (cm)	0.7	0.8	0.7	0.6	0.8	0.7	0.5	0.7	0.9	0.8	0.8	52.1	0.8	1.0
TREE AND LEAF CHARACTERISTICS														
Number of flower clusters/m	44.0	19.0	22.7	24.7	31.7	24.3	24.0	32.0	43.7	37.7	31.7	33.7	34.7	22.7
Height (m)	4	4	4	4	7	6	3	3	4	4	6	4	4	5
Color of pigmentation at 6-7 days old	Café	Café	Café	Café	Rosada	Rosada	Café	Café	Café	Café	Café	Café	Café	Rosada
Leaf width (cm)	12.7	10.8	12.7	12.9	10.6	9.8	2.5	11.9	13.6	10.9	14.1	14.9	13.4	14.8
Leaf length (cm)	32.6	30.2	32.8	31.3	31.2	35.7	6.1	35.9	37.1	31.8	41	38	34.9	39.6
Petiole length(cm)	1.2	1.2	1.1	1.0	1.3	1.0	0.2	1.5	1.3	1.3	1.7	1.5	1.5	1.5
Length from the base to the widest point (BPA)	17.7	17.8	18.5	16	16.4	17.7	3.12	18.3	18.6	16.3	20.4	18.3	18.5	20.2
INDICES														
Cob index (number of cobs per 1kg of dry cocoa)	21.3	32.5	25.8	24.2	14.0	16.0	33.9	18.7	35.2	22.1	17.2	23.3	20.6	29.0
Seed index (number of seeds for 1kg of dry cocoa)	836.2	1061.1	833.3	962.2	674.2	672.6	927.6	786.2	563.2	604.8	718.6	862.7	742.4	485.4
Production g/year	1175.9	1200.6	3758.1	2399.0	640.7	1935.9	913.5	747.9	710.2	2440.5	4191.7	1329.6	3443.1	655.6

CONCLUSION

The implementation of the Participatory Selection Methodology developed in the Municipality of Tecpatán allowed for the identification and characterization of six trees which have high production potential and quality indicators, such as number of cobs to complete a kilogram of dry cocoa.

In considering the morphological characterization done on 47 cacao trees, a high diversity of cocoa materials can be seen. There is also good potential for highly productive trees in the town of Tecpatán, with only 6.8% of the 220 producers who belong to the association having implemented the methodology.

The selection of materials led by the producers is an innovative strategy to regain productivity and maintain genetic diversity of cacao plantations in the state of Chiapas, which can be extrapolated to other regions with similar characteristics.

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STRUCTURAL STRENGTHENING OF A TRADITIONAL ADOBE HOUSE IN CHIAPA DE CORZO, CHIAPAS

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ABSTRAC

This research paper presents an alternative to structurally reinforce the traditional houses of adobe from the historic town of Chiapa de Corzo, Chiapas, Mexico, with the purpose of increasing its seismic resistance capacity. Strengthening works were carried out in 2 houses of adobe, which were selected by the serious structural problems that record; also inhabited by low-income families, bedridden by their social status to make improvements to their homes.

In the development of the proposal was sought that it was economic, retain as much as possible the assets of origin and functional spaces, in addition, to improve the structural safety of the houses of adobe and ensure the safety of the people who inhabit them.

In a second moment, is scheduled to be aceleromtrica instrumentation to measure periods of fundamental vibration of operated dwellings. Thus the evolution of earthquake-resistant capacity will be evaluated to ensure that the proposal will serve as prototype of structural reinforcement in other adobe homes.

Also, it's offer a viable alternative to the relevant authorities seek mechanisms or financial funds that allow you to implement a collective strategy of structural reinforcement of houses of adobe in the city of Chiapa de Corzo, that due to its geographical location, is in an area of high probability of occurrence of certain magnitude telluric phenomena.

Keywords: *housing, adobe, reinforcement, structure, safety, earthquake-resistant.*

The historic town of Chiapa de Corzo, Chiapas, is characterized by the cultural richness of its buildings as historical monuments (OJ, 2000), including traditional creole, mestizo and indigenous houses . The buildings form part of a harmonious and pleasant urban architectural ensemble; however, over time the typical elements of the houses have lost their original values due to natural deterioration and neglect. Earthquakes have been the main cause of deterioration, such as the collapse of a significant percentage of traditional adobe houses by earthquakes in 1975, which caused the mass exodus of the population (Ocampo, et al., 2005).

Based on the accounts of major damage to buildings, it has been established that the seismic activity of the region where the city of Chiapa de Corzo is located is inevitable as a result of the subduction of the Cocos tectonic plate under the North American plate (García and Suárez, 1996), which warns the city that with its wealth of buildings and its inhabitants is located in an area of high probability of occurrence of a certain magnitude of earthquakes.

Additionally, the materials used in traditional dwellings: walls constructed of adobe (earth-straw) coated with lime-sand mortar and wood structures that support clay tiles on the roofs, do not guarantee the stability of the building due to the action of dynamic forces generated by earthquakes . The cause of this problem is attributed to poor structural containment of the construction elements.

A significant number of adobe houses have been maintained over time due to repeated episodes of damage and repairs done by the inhabitants, which often modify the original typological characteristics. An additional set of homes have not been repaired due to economic constraints of the low-income families that inhabit them. In this regard, the present investigation aims to develop a proposal for structural reinforcement to increase the seismic resistance of traditional adobe houses of Chiapa de Corzo. It is relevant that s that reinforcement is economical, and that the original design elements are conserved as much as possible along

with the functional spaces and, most importantly, that there is a scientific and technological assessment of the improvements in the structural safety of homes.

The work being done is part of the research project: "Proposal for structural reinforcement for the consolidation of the traditional home of the historic center of Chiapa de Corzo, Chiapas," funded by PROMEP-SEP (2013); the team of researchers consists of academics from the Autonomous University of Chiapas and the Autonomous University of Guerrero, that form part of the academy of Urban Development (CADU-UNACH) and academy of Natural Hazards and Geotechnology (RNG-UAG), respectively. The beneficiaries of the project are low-income residents of traditional adobe houses, the National Institute of Anthropology and History (INAH) and the Municipal Government of Chiapa de Corzo.

PREVIOUS RESEARCH

In previous years, the researchers conducted a study in the urban area of the city of Chiapa de Corzo, to establish seismic zoning according to the fundamental period of ground vibration. The results allowed us to identify two areas; the first (Zone 1) range from 0.10 to 0.25 seconds and the second (Zone 2) with longer intervals recorded from 0.25 a 0.50 seconds of vibration, located precisely on the banks of the Grijalva River. Measurements were also taken of some behaviors of traditional houses (and Escamirosa Salgado, 2004), (Salgado et al., 2005).

In 2013 the inter institutional task force with the participation of students from the Faculty of Architecture of the UNACH and students of the Academic Unit of Engineering UAGRO, made a diagnosis of the problems of traditional houses located around the historic downtown section of Chiapa de Corzo, considering the type of housing, and social status of low-income residents according to Ocampo Garcia (2003). According to the diagnosis that was made,

2 traditional houses were selected as case studies to determine the structural dynamic properties and their vulnerability in a higher magnitude earthquake scenario by analyzing records of seismograms during the fundamental periods of environmental vibration done on site with acceleration sensors.

In this paper reference is made to one of the selected households, owned by Evangelina Aguilar Montero who noted that the property is more than 80 years old. The property is located in seismic zone 1, between Avenida Miguel Hidalgo and Calle Tomas Cuesta, in the San Vicente neighborhood, with geographic coordinates UTM (498673.62, 1847525.79) and an elevation of 433.78 meters above sea level. Its structure is formed by a stone masonry foundation, 40 cm. thick adobe walls, clay tiled roof supported with a structure of round wooden beams and planks. In the visual structural assessment, serious cracks in the walls and cracks in the corners we observed, which adversely affect the stiffness and cause an increase of the vibration period of the house (Figure 1).

Figure 1. Traditional adobe home owned by
Evangelina Aguilar Montero

Subsequently the accelerometer was installed in the house to obtain the necessary measurements to determine the fundamental periods of vibration in the house and in the corresponding soil. According to seismograph records stored in 3 orthogonal dimensions of 30 seconds duration each, and based on the calculations of the Fourier spectra in each record, the transfer function, or spectral ratio was established using the Nakamura technique. The results indicate that the fundamental vibration period on average is high: (. Escamirosa, et al, 2013) at 0.2133 seconds in the soil to 0.1506 seconds for the house(Figures 2 and 3).

Figure 2. a)Installing the accelerometer on the floor, b) Installing the accelerometer inside the house
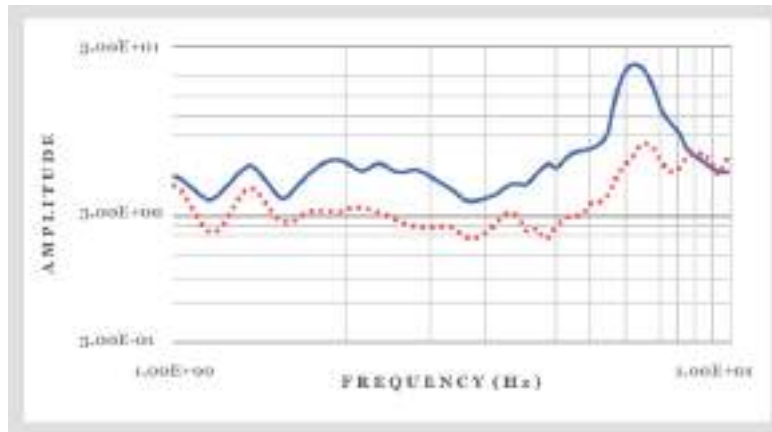
Figure 3. Fundamental period of the house with a vibration of 6.64 Hz that are equal to 0.1506 seconds

PROCESS OF STRUCTURAL REINFORCEMENT (INTERVENTION)

The intervention work began again with the identification of the geometric characteristics of the house, which included sizing and functionality of the spaces, and the conditions of existing structural elements: foundations, walls and roofs. With this, the team developed a proposal for an intervention for the structural reinforcement of the house, based on similar cases analyzed by Arroyo, et al., in 2010. The was immediately followed by a request for authorization by the INAH to conduct the intervention and request a building permit from the municipality of Chiapa de Corzo.

In early June 2014, the necessary materials were purchased to carry out the construction of the structural reinforcement of the adobe house. On Monday June 16th the work began , which was completed in August of that year. The procedure of the construction is described as follows:

1. Removal of doors: Frames and panels of 3 wooden doors were removed carefully to avoid unnecessary damage to the adobe walls.
2. Removal of mortar: On both sides of the existing walls the coating was removed, essentially made of lime-sand (Figure 4).

Figura 4. Removal of the existing mortar on the house

3. Cleaning and wetting of walls: before applying new mortar work.
4. Application of the first layer of mortar: cement-sand mortar was used with 1: 3 to cover the walls, throwing mortar by hand and then, with a wooden trowel spread to a minimum thickness of 1 cm . The mortar was applied according to the original shape of the wall; that is, no vertical leveling was considered for the walls.
5. Placing of steel mesh: On the walls welded steel mesh (6x6 / 10x10) was placed and on both sides were simultaneously anchored with wire anchors and annealed wire. The anchoring was previously carried out by drilling with a 5/16 "drill bit; the wire was placed forming a grid of

1.35 m. and annealed wire at a smaller lattice of 45 cm. Overlaps of mesh sections were performed at 60 cm. (Figure 5).

Figure 5. Attaching the wire mesh 6x6 / 10x10 inside the housing

6. Application of the second layer of mortar: The second layer of cement-sand mortar requires wet walls in order to obtain optimum concrete strength. Like the previous layer, the minimum thickness was 1 cm. (Figure 6).

7. Finished walls: a thin layer of putty produced from cement-lime with a 1:10 proportion was used for the final finish on internal and external walls, like the original caulking on adobe houses (Figure 7).

8. Placement of doors: 3 doors were hung and properly adjusted.

9. Replacement of damaged wood: The wood planks that support the clay tiles were replaced by 1 "x4" pine planks.

Figure 6. Application of the second coat of cement-sand mortar

Figure 7. Lime plaster with cement

10. Application of final finishes: The color of the paint on the walls and the roof structure was selected based on the type of the traditional houses in Chiapa de Corzo. The floor of the house was improved with 30x30cm ceramic tile.

On July 15, 2014, the research team decided to structurally reinforce another adobe house, located on Calle Tomas Cuesta No. 80 in the same neighborhood of San Vicente, whose owner Reyneria Moreno Cuesta said that it had been built by her father over 70 years ago. The house was built on a stone masonry foundation, with 38cm adobe walls on the main facade and 30 cm. on the rear façade. One of the walls butted against the fence that borders the neighboring dwelling. The walls were not coated with mortar, and had only a precarious layer of lime on the main facade that has served to keep the mud from the outside environment. The cover is constructed with clay tiles supported by a frame of round wood beams and planks (Figura 8).

Figure 8. Traditional adobe home of Reyneria Moreno Cuesta

As in the previous case, the conditions of the structural elements in the home were analyzed and it was observed that due to a lack of coating on the walls, the adobe had been exposed to climatic variations over many years, which has resulted in adobe in very poor condition. There were also serious structural problems found in the walls, cracks were observed, inclination (unplumbed)

and cracks in the head walls with interceptions in the main and rear facades. In the roof structure, two rotten round wooden beams were identified, and some planks supporting the tiles and the wooden lintel of the door located in the rear façade showed termite damage.

In this house the following actions were performed:

1. Removal of the existing layer of lime.
2. Strengthening the wooden lintel: At the door of the rear facade, an 8 cm. thick wooden pine plank was placed in the bottom of the existing lintel (Figure 9).

Figure 9. Strengthening the existing lintel with a pine wooden plank.

3. Placement of steel mesh (Figures 10 y 11).
4. Removal of the metal doors.
5. Cleaning and wetting the walls.

Figure 10. Attaching the wire mesh

Figure 11. Drilling the adobe to fix the steel mesh

6. Application of mortar: the first layer of cement-sand mortar was placed, ensuring a minimum thickness of 1 cm; After a long enough time for the mortar to set (2

hrs.), the second layer of a minimum thickness of 1 cm was applied., which was smoothed with wooden trowel. Similarly as in the previous housing, troweling was performed according to the level of the vertical walls (Figure 12 and 13)

Figura 12. Application of cement-sand mortar

Figure 13. Application of the cement-sand mortar

7. Inserting the metal doors.

8. Replacement of damaged wood: In the structure of the roof, 2 5 "in diameter round wooden beams and 5 1" x4 pine planks were substituted.
9. The walls were finished with cement-lime plaster.
10. Application of final finishes.

Monitoring and technical supervision of the work in general was done by the members and staff of the School of Urban Development (CADU-UNACH); José Adolfo Pérez Pérez and Francisco Javier Alvarez Roblero of the School of Architecture of the UNACH were also present to assist.

PRELIMINARY RESULTS

According to measurements taken before the structural reinforcement, the adobe house owned by Evangelina Montero had a fundamental period of vibration of the order of 0.1506 seconds, above the range of 0.08 to 0.12 second which is considered structurally sound by Hernandez, et al. (1979). Therefore, it was established that the structure of the house had high seismic vulnerability and therefore a safety risk for its inhabitants.

Regarding the adobe house owned by Reyneria Moreno Cuesta, although it was not analyzed in situ with accelerometers to record their fundamental periods of environmental vibration, due to the severity of structural problems posed prior to its structural reinforcement, it can be inferred that its seismic vulnerability and risk to the safety of the people were greater than the other home.

The structural reinforcement was performed in both houses during the months of June, July and August 2014. Following the completion of this work, it is planned in subsequent months the installation of accelerometric instrumentation to perform an evaluation and determine the new periods of fundamental

vibration. The new measurements made it possible to assess the evolution of the seismic capacity in both traditional adobe houses of the historic town of Chiapa de Corzo.

Figure 14. Result of structural reinforcement in housing.

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PSYCHOLOGY AND POLITICS.
CASES OF COMEDY AND FEAR IN THE
MEXICAN PRESIDENTIAL
CANDIDATES OF 2006

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ABSTRACT

We can argue that without the active presence in the media, political proposals or candidates lack any ability to gather broad support. Thus, politics is framed in content, organization, process and leadership by the logic of the media system. Moreover, the increasing complexity of the campaigns has led candidates and their strategists to resort to mechanisms, discourses and images that stimulate the unconscious of the elector: hopes, fears, aspirations and projects.

This article aims to review political psychological strategies that were used in the Mexican presidential campaigns in 2006, focusing on the uses of comedy and fear, and the arguments that have been presented regarding the benefits and harm that they entail.

Keywords: *Political Psychology, elections, comedy, negative campaigning, Mexico.*

Political campaigns have changed dramatically; however, such changes are unprecedented in the times of a new mechanism of mass media, and political parties, especially at election time, use them. First, the newspapers were responsible for spreading the messages, then radio, then television and now the Internet. However, the notable changes is the deepening of the use of techniques of political communication with the main purpose of appealing to the subjective questions of readers, listeners, viewers and Internet users; ie turning to their fears, phobias, hopes and dreams and finally to their imagination. In this manner not only the government's proposals are passed along, but what people feel is emphasized. For example: if a candidate expresses his economic proposal noting the need for state regulation of the economy, the other contender, which is closer to free market ideas, can point to the other as a "communist" and disseminate what might be the effects of such economic policy, but would also have to resort to lying: an argument that a nationalized economy would generate an immediate inflationary increase in expenses. This indication naturally has the objective of demonstrating the possible consequences of the nationalized economy by instilling fear among people by telling them that their wages will decrease and prices will go up.

In Mexico, appealing to the emotions of voters during campaigns is not something new. The campaign slogans of different candidates in different elections demonstrate this: "Welfare for your family" (Ernesto Zedillo Ponce de León, 1994); "The vote for change" (Vicente Fox Quezada, 2000), and "For the good of all, first the poor" (Andrés Manuel López Obrador, 2006). However, this political-emotional phenomenon worsened during the 2006 elections, where the aforementioned Lopez Obrador who represented the Party of the Democratic Revolution, Labour and Convergence, and the today the Citizen Movement; Felipe Calderon Hinojosa, the National Action Party; Roberto Madrazo Pintado; by the Institutional Revolutionary Party and

Green Ecologist Party of Mexico; Patricia Mercado Castro for the Alternative Social Democratic and Peasant Party, and Roberto Campa Cifrián by the New Covenant Party.

The 2006 campaigns to elect the head of the executive power of the Union were, without doubt, the most competitive and confrontational, not only among political actors but also between society that has taken place in recent history . The constant accusations between the PAN candidate and left, using a classist language that divided society between poor-honest / rich-evil, and the intrusion of external agents of the candidates created a confrontation. Moreover, this was reinforced with the request of the Coalition for the Good of All for a total recount and writing of the final report made by the Electoral Tribunal of the Judicial Power of the Federation.

During the election campaign, launched on January 19th and completed on June 28th, candidates toured the Mexican states in search of the popular vote and participated in rallies, shared their proposals and appeared in the media, but it was television that was the scene of tensions between the different political projects (Table 1). In the end, the common practices in which voters are mobilized with modern strategies which are used for political marketing and mass media were combined were hybrid campaigns (De la Torre & Conaghan, 2009). Besides the traditional spot, advertising formats were diversified although that did not result in improving the quality of services or building a real debate on the national agenda. There was no dialogue between candidates, parties and citizens.

That is what this text is about: the use of the strategies used by the candidates in the that election, with an emphasis on those that resorted to the stimulation of emotions through fear and comedy.

These campaigns were developed with an electoral law passed in 1997 which allowed the purchase of advertising media companies by third parties or politicians. In 2007, as part of a process called State reform, the Constitution of the Republic and the Federal

Code of Electoral Institutions and Procedures established that the political parties would agree to radio and television ads only during public (official) times, and political parties, individuals and corporations could not develop propaganda in favor for or against a candidate or party. It is in this manner that the campaigns which are a focus of this study reflect, perhaps for the last time, the use of strategies on television to generate fear among voters. This new regulation was tested in the elections of 2009 and 2012, and are substantially different than in 2006: the parties did not engage in electronic media advertising.

PSYCHOLOGY, POLITICS AND DEMOCRACY

Democracy is a truly political , institutional and legal, even cultural phenomenon, but it is also of a psychosocial nature, because it is examined as a matter of national thought taken from the hidden and overt references. The uncertainty of not knowing who will win the election is a feature of the democratic system that sometimes seems to be replaced by voter mistrust towards institutions guaranteeing the organization, development and qualification of the elections.

Democracy is not the object of joy for a few or better yet, a stronghold of rulers, but a way of life in daily practice. We can refer to article 3. of the Constitution of Mexico, in particular subparagraph a) of Section II, which considers democracy "[...] as a way of life [...]." It is a value and a symbol. Here's a difference: for some (the rulers), democracy is shown in laws; for others (the ruled), it promotes a social, peaceful and equal coexistence where beliefs prevail. Democracy, understood in the latter manner, cannot be reduced to processes of political representation. It has a social agenda, a non-instrumental character value- exactly the definition of what is an election campaign provided by Norris (2002: 127) which helps introduce us to our topic: "[a campaign intended] to inform, persuade and mobilize [the electorate]." Knowing and

explaining the democratic phenomenon and its internalization of democratic values and transmission and behavior that individuals have in spaces where democracy takes place is one of the interests of political psychology.

The first record on political psychology can be found in the work of Gustave Le Bon, published in 1910,"The Psycologie Politique Sociale et la Défense". The French author's concern is governance: political psychology aims to determine the means to govern a people. For this to be achieved, the author takes us to the intimate knowledge of the mentality of individuals and peoples, where political psychology consists of five sources: 1. Individual psychology; 2. The collective psychology; 3. The psychology of crowds; 4. The psychology of peoples, and 5. The lessons of history. Le Bon (1921) gives five political aspects of particular relevance that shape his thinking on political psychology: 1. The stage assembly and scenery in political acts that serve to influence sensitivity and imagination of viewers; 2. The environment must be animated by flags and banners, combined with the careful use of sound and silence; 3. leaders properly handle hope, expectation and faith; 4. The grammar of persuasion, which is built for the prestige it suggests; assertion without proof; repetition, and mental contagion; finally, the last aspect is the creation of a sense of caring community, the "we".

COMEDY IN POLITICS

A new format in Mexico employed in these campaigns was what Barbaro Origilio called "info-fiction," which was used by Televisa in the comic-political series *"El Privilegio de mandar"* and soap opera *"La fea más bella"* (García Rubio, 2009 : 5-6). Origilio refers to, while returning to Jean Baudrillard, a simulation can have real consequences if the actors immersed in it are perceived as real. Thus, what was staged in *"El Privilegio de mandar"*, a parody of

the electoral process, could be considered by the audience which at one time were for the most part voters and included information about the candidates, political parties and campaigns , may well affect the political perception of the viewers (Origilio., 2007: 250 and Del Arenal et al, 2007: 261-288). Furthermore, with respect to the soap opera *"La fea mas bella"*, in one scene a character said he would vote for the "President of employment"-alluding to the campaign speech of candidate Felipe Calderon, and then explained his reasons. A few days later, the producer of the soap opera, Rosy Ocampo said that the reference was strictly commercial and not political, and such a line exposed on the screen corresponded to the commercial area of the station. It was, she said, like how other mentions are made to promote baby items or cosmetics. Moreover, candidates of all parties, except for Lopez Obrador who rejected the invitation, attended the now defunct program Otro Rollo, whose audience was primarily young people. Led by Adal Ramones, they discussed their policy proposals colloquially. Each candidate responded differently to the questions and activities that the host asked of them. On March 7, 2006 the cycle of visits of candidates to the program began.

Roberto Campa was the first and was accompanied by his family, and because he has his own business in the automotive industry, an analogy of the country as an old car was made. Felipe Calderon arrived the 14th of that month and spoke of his father. He was visibly nervous when he began but when it was his turn to participate in the corresponding dynamics which consisted of painting a wall with the logo of his party, he was relaxed and confident. A week later, on the 21st , came Roberto Madrazo. He spoke of the "new" PRI, his love of exercise and the illness of his wife. During the interview came the "friend Roberto", a parody of a presidential candidate portrayed by the actor Arath de la Torre in *"El Privilegio de mandar"*. On March 28, it was the turn of Patricia Mercado. She was the last candidate to be on the program and the conductor Adal Ramones was characterized by "Ady

Ramones" who pretended to be a childhood friend of Mercado. The host of the program received a gift from Mercado: a book with photographs of prominent women, a detail that the other candidates did not provide. In the dynamic, she had to participate in the preparation of dinner, where references to ingredients were made that included the names of the other parties (Gunther et al., 2007: 289-312).

Two questions: Why were the candidates on programs such as *"Otro Rollo"*? Why was so much attention paid to *"El Privilegio de Mandar"*? The answers can be found in the humor and political functions that: a) achieve greater social visibility of politicians, helping to better capture the attention of citizens and the media itself; b) facilitates the process of persuasion, functioning as a communication stimulus to influence the beliefs, attitudes and behavior of citizens; c) serves as a means to insult and ridicule the opposition .In this case, the humor is based generally to show the incongruity and absurdity of the actions, or proposed policy positions of the adversaries; d) generates a positive attitude and willingness among listeners, as are the objectives of humor to make you laugh, to please you, to be liked and seduce the audience; e) helps generate a higher level of memorization, as voters more easily remember those phrases, speeches and political rallies which were present in that atmosphere; f) improving the understanding of the message conveyed with the use of metaphors in a humorous way; g) helps achieve true differentiation and identity, as people tend to better identify with politicians that have a good sense of humor and those whose main gift is to make them smile; h) helps elevate the mood of the audience and overcome difficult times; i) mood has great power to bring people together and get the cohesion of a group helping to form, for example, highly competitive campaign teams, j) Finally, mood affects voting behavior; ie, generates an effect on decision-making and electoral voter motivation (Valdez Zepeda, 2011: 78-80).

NEGATIVE CAMPAIGNING

If on one side the campaigns use humor, those appearing in the other so-called negative, black or contrast campaigns, there is no doubt that they were the most common in 2006. It should be said that these are not in themselves a product of recent manufacture. They have existed in the United States since campaigning began. One example is the dispute between John Quincy Adams and Andrew Jackson in 1824 which continued four years later where they were used pamphlets and just over 600 newspapers who were supporters of General Jackson, which attempted to account for the fraudulent government management of Adams while supporters of the latter made mention of the mother of Jackson which was labeled a woman of low moral principles and that led to a pronouncement of indecency (Perloff, 1999: 19-40).

In contemporary terms it can be said that the use of negative campaigning using spots with direct attacks on candidates appeared in the American election of 1952, when the Republican candidate, Dwight Eisenhower, used an ad called Americas Asks Eisenhower Answers, where some citizens were asked questions about the state of the economy and the war and its responses.

In general, it blames the Democrats for the low levels of prosperity, corruption and rising prices. His campaign slogan was "It's Time For a Change". In 1956, he had the answer from the Democratic candidate Adlai Stevenson, that under his campaign "What Say my General?" questioned the broken promises of the Republicans (Kuschick, 2008: 102).

But the great moment of negative campaigning took place in the succession of 1964, when Lyndon B. Johnson, who became President of the United States on November 22, 1963 after the assassination of John F. Kennedy, was seeking reelection. He used the Daisy Girl Spot, directed against the nuclear threat and particularly against the Republican candidate Barry Goldwater, whom he accused of wanting to use the American weapons against

the Russians. The aforementioned ad was shown only once, but its effect was devastating to the Goldwater campaign. This leads us to say that an ad that produces effects on the public need not be passed countless times, but it only requires to be well done and achieve the purpose of impacting the audience (Kuschick, 2008: 102-103)[1].

In relation to negative campaigning, arguments can be found in almost all subjects. Some believe that they are a necessary part of political competition and their prohibition is unnatural. They further argue that there is no conclusive evidence that the attacks discourage voter turnout or that the general opinion of democracy is affected by such messages. If conveying information and persuasion are two of the fundamental tasks in a campaign, criticizing then becomes a form of transmission, which causes these types of campaigns to be considered positive for a democratic system because they generate better informed voters. In addition for their supporters, there is a relationship between increasing levels of attack campaigns and declining interest in elections as a mechanism to hold the rulers responsible; negative messages powerfully influence electoral decisions, and there is no link between the reduction of trust and civic participation with increasing negativity in campaigns (Geer, 2006).

At the other extreme, those who question the negative campaigns state that they affect democracy in several ways: it reduces the number of voters and promotes distrust in elections. They say that negative campaigning condenses opinion and reduces the subjective reasoning of the elector; denigration has asymmetric effects, and decomposition and bitterness are deep

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1 The public in the United States is completely accustomed to seeing comparative advertising and contrast publicity in an aggressive and personal manner. Numerous teams from each candidate dedicate a great amount of time to find the weak points of the opponent, analyze his political career and the coherency of his personal life "(Priess, 2009: 148).. The Daisy Girl video is available at: http://www.youtube.com/watch?v=63h_v6uf0Ao.

wounds that destroy personalities and put into action mechanics of revenge (Treviño et al., 2007: Laguna 48 and Becerra, 2008: 185-186).

Karen S. Johnson-Cartee and Gary Copeland in 1989 published a study that identified 10 types of negative messages. They separated types of spots into two classes based on the observed content: 1. Contents of a political character centered on issues related to the political performance of the candidate, and 2. Personal content, focusing on the characteristics of his personality and his private and family life. When a group of voters were asked their opinion on these two great classes of spots, the answer was that they considered unsuitable those related to the characteristics of his personality and his private and family life, and relevant those that had public policy issues as the core axis. Years later, the same authors identified three modes of argument in negative publicity: 1. direct attack ads; 2. direct comparison ads, and 3. implicit comparison ads. Each of the three presents information using an inductive or deductive method: a) direct message: only attacks the opponent; b) direct comparison message: directly compare candidates with their experience, previous election results, etc., and c) messages implicit comparison: truncated syllogism is not negative in itself, but it is the interpretation that the public will assign the negative character (Johnson-Cartee & Copeland, 2011: 22-23).

In a study by GW Richardson, four categories of negative spots were defined: a) unbalanced; b) misleading; c) Cutthroat, and d) emotional. The "unbalanced" are defined as those with a biased argument, regardless of its veracity. The "misleading", are characterized by the lack of credibility of the argument that makes the information presented in doubt. "cutthroats" are characterized by elements that emphasize aggression and personal attack on a candidate. Finally, the "emotional" spots frequently use arguments that appeal to emotion and lack, therefore, a rational argument regardless of its veracity (Juárez Gámiz, 2009: 118).

According to Kathleen Hall Jamieson (1992),there are four attack strategies in a political contest: 1. The appeal to the emotional and visceral to try to generate an overview of "good" and "bad"; 2. The identification of the adversary with a symbol or character that voters relate as negative; 3. The comparison that allows a candidate to be associated with something that is perceived as good, and 4. The establishment of an association or connection between unrelated images, suggesting to citizens an act of inference.

Authors like Stephen Ansolabehere and Shanto Iyengar (1997) express their criticism of the effects of negative political messages, arguing lower voter turnout is a result which can be considered as a threat to democracy and voters only obtain partial information of the attacked candidate; In addition, the effect depends on several factors, such as party preference and the gender of the candidate who sends the message. Thomas Patterson, following the same logic as Ansolabehere and Iyengar, states that negative campaigning discourage voters, to the extent that citizens want "less politics in their lives" (Lugo Rodríguez, 2011: 24-25).

Another author who identifies three possible negative effects that can generate this type of campaign is Merrit (1984): a) boomerang, which means that these messages could cause a rebound effect and cause more damage to the candidate who used them than to the one who was targeted; b) victim syndrome, is when voters generate feelings of empathy for the attacked candidate, c) double deterioration, occurs when the two candidates, the attacker and the attacked, have detrimental effects.

Linked with black propaganda is the "political scandal". John B. Thompson (2001) provides a description of this phenomenon. The political scandal occurs when people who operate within the political sphere are implicated, and this has a significant impact on the relationships established within it. The use of a political scandal is part of the control strategy to achieve the symbolic power associated with reputation, prestige and trust. All three are forms of symbolic capital necessary for the exercise of political

power. In Mexico, several scandals of this nature can be recalled which were utilized in the campaigns of 2006: the gambling of a government official of the City of Mexico (with Public funds?) and the delivery of large amounts of money to officials who were also part of the government of Mexico City by the businessman Carlos Ahumada that supposedly would be used in the political campaign of Andrés Manuel López Obrador. These videos that were presented in programs with a large national audience (Mora Heredia & Rodríguez Guillén, 2004 Carlos Ahumada: 85 -94).

Attack campaigns   slander and even denigrate opponents, and can be considered as signs of anti-politics because they cause open confrontations and are often sterile-intolerance appears and exclusion of balance is present; In the end, the role of politics is discredited (Pérez Correa, 2004: 12).

Negativity was positioned in the political campaigns of 2006 as a result of a postmodern society, where there is fear of the stranger and of losing what you have - it's most common manifestation is isolation. What you want to avoid is that the one who strikes fear wins (Pérez Fernández del Castillo, 2008: 117). In this argumentative line, we should remember David Bell who said that electoral processes are linked to the ownership and possession of goods. To the extent that people have something to protect, there is an increase in their interest in participating in a political campaign. "Lopez Obrador: a danger to Mexico" campaign and its comparison to Hugo Chavez could mean, among the middle classes, a possible fear of the consequences that would entail for this sector of the population for this possible government (Kuschick, 2008: 102 and 107)[2]. Furthermore, the Business Coordinating

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2 By March 2006, changes occurred in the campaign team of Felipe Calderon: Francisco Ortiz was replaced as the image coordinator by Antonio Sola, who in Spain had collaborated with the Peoples party(Low Book, 2006) It is possible that along with Sola, Dick Morris has devised the aggressive campaign strategy of the PAN. We should recall that on April 3, 2006, Morris published an article in The New York Times entitled "Menace in Mexico" which in Mexico was taken up by David Brooks, from La Jornada, on April 17 of the same year

Council paid for two spots that appeared in May. While it did not mention any candidate, they talked about staying the course and the danger of changing. Other organizations such as "Arm yourself with courage and vote", and even private citizens such as Víctor González Torres, called "Dr. Simi ", paid for TV ads against Lopez Obrador (Table 2), thereby in effect violating Articles 38 and 48, section 13 of the Federal Code of Institutions and Electoral Procedures; however, there was no penalty because the law at that time did not include mechanisms for this purpose. In summary, there was constant fear and confrontation, as was noted in the *Opinion on the final results of the election for President of the United Mexican States (Electoral Tribunal, 2006).*

FINAL APPROACH

Beyond the discussion of whether the effects were harmful or not of the use for promotional purposes, one thing is certain: the candidates have no other way to influence voters other than using the resource of advertising. This is emphasized over large districts which prevents compete coverage throughout the duration of the campaign. On the other hand, the spots are also the almost unique means for most of the population to discuss the proposals of candidates for elective office. It is the advertising messages and what the candidates say in the media that are about the only possibility to obtain information. Messages persuade, this is their characteristic. We are reminded of Carl I. Hovland, Arthur A. Lumsdaine, and Fred D. Sheffield, in their work "Experiments on the job in Mass Communications." The three factors to persuasion are: 1. Exhibition 2. Reception and 3. Acceptance. The first factor relates precisely to be exposed to the media. Reception is a process of both a cognitive and emotional nature. For example: perhaps one of the things that most affected the López Obrador campaign was the phrase "Shut up, Mr. President." The form under which the

message was given prejudiced against public opinion, because the PAN and its critics presented it as an offense to the presidential inauguration by a bigoted individual (Ramos Pérez, 2006). The last factor is the acceptance of the message; usually, the audience is receptive to the messages they are sent and that the media has previously accepted, hence persuasive communication is usually effective with uninformed people and those who do not have an established preference in an electoral event.

Finally, in a campaign voters may develop positive or negative attitudes toward a candidate on the basis of assessing signals transmitted during the period of political campaigning (Sankey Cárdenas García & Díaz, 2010: 51).

The revised electoral process demonstrates that the use of electronic advertising is the main resource of political parties and their candidates and campaigns. This observation was also confirmed when observing the various and frequent political commercials, and is corroborated by the reports on the use of electronic media that authorities had allowed after the election. All of the parties together, according to the IFE, spent 1.973 million pesos in the electoral process on the recruitment of advertising space on radio and television. 757.572 (601.689 155.883 radio and television) Spots were transmitted. This amounts to around 3,400 hours of advertising on radio and 920 on television. The parties devoted the following figures to electronic advertising: PRI, $ 642,073,695.00; PAN, $ 620,247,158.00; Coalition for the Good of All, $ 575,658,364.00; New Partnership, $ 91,251,251.00, and Alternative, $ 44,742,067.00. The IFE also identified a total of 281,026 spots that were not reported by the political parties, which may amount to a billion unregistered pesos (Murayama Rendón, 2008: 282). There is no evidence of who, how and when these promotional ads were paid. Such amounts are not insignificant and in the last ten years over a billion dollars in electoral campaigns have been spent in Mexico and 60 percent have been used to buy time on electronic media.

We live so immersed in the "video" (Sartori, 2010: 73), because if a candidate is sold like any product, then advertising has replaced politics and it has therefore become a show. As Gordillo and Lajous (72 2007) note, "The 'democratic' newspeak sees politics as a market. [...] The product being sold is politics, for which it requires fundamental marketing instruments: electronic advertising and surveys "On the television screen, the life of the society is reduced to the dramatized staging of a set of images and symbols of power that are eloquent, impoverishing, and represent the political discourse (Martínez Pandiani, 2004: 55-56).

Campaign discourse has gone from the exaltation of personal virtues and the program of government to denouncement and ridicule of the other candidates based on metaphors, allegories and comparisons (with other nationals or foreign personalities, contemporary or otherwise), making an emphasis on the imagination of each elector: turning to their hopes and dreams that could never be concretized or fears that may appear in the act of the government who turns out the winner.

Candidates and parties have found that in the stimulation of emotions there is a real chance for victory in the fair election, even while knowing that what the voters can never happen in reality.

ANEXES

Table 1. SPOTS of the political parties on television during the campaigns of 2006

Party	January	February	March	April	May	June	Total
PAN	1,447	2,371	2,187	3,929	7,481	22,574	39,989
% spots a month	47.35	18.43	25.37	41.91	23.78	24.88	25.66
PRI/PVEM	764	6,884	3,026	4,429	14,949	39,339	69,391
%	25	53.52	35.1	47.24	47.51	43.35	44.52
CPBT	821	3,101	2,697	847	5,767	19,844	33,077
%	26.87	24.10	31.29	9.03	18.33	21.87	21.22
Panal	24	507	685	66	3,090	8,175	12,547
%	0.79	3.94	7.95	0.7	9.82	9	8.05
Alternativa	0	0	25	104	177	547	853
%	0	0	0.3	1.11	0.56	0.6	0.55
Total (100%)	3,056	12,863	8,620	9,375	31,464	90,479	155,857

Source: Trejo Delarbre, 2010: 164.

Table 2. NEGATIVE CAMPAIGNS AND THE DECISION TO VOTE

**At the time to decide your vote,
which of the following themes influenced your decision?**

Candidate	The comments that Lopez Obrador is a danger to Mexico	The case of Felipe Calderons brother in law	The criticisms of Lopez Obrador of President Fox, for example when he called him «chacalaca»	The comments that Felipe Calderon defends the interests of bankers and businessmen	Don't know/ no answer
Calderón	52	20	50	29	35
Madrazo	27	19	23	17	24
López Obrador	18	57	24	51	36
Others	3	4	3	3	5
Total	100	100	100	100	100

Source: Trejo Delarbre, 2010: 179.

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IMPACT OF INTERNATIONAL MIGRATION ON POPULATION STOCK IN THE STATE OF CHIAPAS DURING THE PERIOD 2000-2010

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ABSTRAC

During the nineties of the last century and the first part of this century, the state of Chiapas became the national protagonist in migration to the United States, ranking in the top places and even displacing the volume of flows originating in the traditional migration region of Mexico. However, after a decade of immigration boom different questions arise: Was migration north consolidated? With what force does it continue? Has there been any effect on the size of the population? This investigation focuses its analysis in unraveling the last question for the decade between 2000-2010, using a demographic technique called the balancing equation. It is concluded that during the study period the northward migration by Chiapans resulted in an average annual loss of 30 thousand people in the state, however this volume failed to cause a population decrease although a deficit of some men is visible.

Keywords: *Chiapas - Immigration - United States*

Chiapas did not notably participate in the migration north for most of the twentieth century. It is at the end of this century when they joined the migratory now consolidated and long traditional flow in some regions such as the West and the Bajio. The explanations are varied. Chiapans did not migrate abroad because they would not leave their places of origin, so they were satisfied with the temporary displacement within the state or to the Federal District and State of Mexico.

However, this situation abruptly changed during the nineties of the last century. The population from the native peoples of Chiapas began nurturing the flow of Mexican migrants who were heading north in search of the American dream. Several factors contributed to this, such as the armed movement in 1994, the farm crisis, natural disasters, forced displacement caused by infighting within indigenous communities, and the inertia of the Central American immigration, among others (Jáuregui and Avila, 2007). In reality the flowering of northward migration would not have been possible without the combination of all of these factors.

After the immigration boom of the nineties of the last century, it is necessary to pause and consider whether northward migration was able to consolidate during the first decade of this century, or if it was just an ephemeral process,-a fad or a residual phenomenon that at times the media and some scholars of the phenomenon came to speak of a diaspora of such that Chiapas was running out of a population of productive age.

For this reason, this research focuses on two aspects:

1. Estimate the effect on the size of the population that has participated in the northbound migration from Chiapas
2. Know the consequences of the migration process north on the structure of the population

The investigation is divided schematically into four sections. The first is where the history of migration to the United States from Chiapas is described. The second is about , methodology, and the third are the reported results, and the fourth are final thoughts.

I. BACKGROUND:
THE MIGRATION OF CHIAPANS TO THE UNITED STATES

Migration between Mexico and the United States has a long tradition. We know it dates back to the late nineteenth century with the construction of the railroad when hundreds of migrants left their places of origin from the location known as the traditional region of migration (Durand and Massey, 2003). However Chiapans were not participants in this process, nor as those as important as those developed in the twentieth century such as the Bracero Program that was in effect from 1942 to 1964 (Jáuregui and Avila, 2007).

It is in the mid-nineties of the last century when an increase in Chiapans began migrating to the United States began to be recorded for a sustained period (Table 1), which several authors have referred to as explosive and unprecedented (Villafuerte and Garcia, 2006, Jáuregui and Avila, 2007; Viqueira, 2008; Anguiano, 2008 and Soria, 2009). From the 5,857 Chiapans that went to work or study (live) in the United States between November 1990 and 1995 to 2009 National Survey of Demographic Dynamics (ENADID) recorded a total of 69,540 international migrants.

Table 1. Number of Chiapans who have gone to work or study in the United States, 1995, 1997, 2000, 2002, 2005 and 2010

Sources of information	I Population and housing census(1995)	National Survey of Demographic Dynamics (1997)	XII General Census of Population and Housing (2000)	Module of International Migration of the National Survey of Employment (2002)	II Population and housing census(2005)	ENADID (2009)	XIII General Census of Population and Housing (2010)
Period	From November 1990 to November 1995	From January 1992 to January 1997	From January 1995 to February 2000	From November 1997 to November 2002	October 17th, 2005	2009	June 12, 2005
Have gone to work or searched for work in the U.S.A.	---	9,077	---	---	----	----	----
Have gone to work or study (live) in the U.S.A.	5,857	7,858	8,870	41,945	----	----	----
Of those that went to live in the U.S.A., how many reside there?	5,488	3,346	7,468	33,759	----	----	----
Migration to the U.S.A. of some family member	----	----	----	----	----	56, 224	----
Total number of international migrants	----	----	----	----	----	69,540	----
Residing for 5 years in the U. S. A. (2000)	----	----	----	----	1,686	----	10,771
Homes that register some family member that went to live or lives outside of Mexico in the last 5 years	----	----	----	----	----	----	19,422

Total number of households that register some member of the family that went to live or currently live outside of Mexico in the last 5 years	----	----	----	----	----	----	22,786

Source: Prepared by processing the database of the survey involved.
(---) No Data.

The survey on Migration in the Northern Border of Mexico (EMIF) is another useful source of information for determining the dimension of the immigration process to the United States, but unlike census surveys or household surveys, it measures migration flows based on a methodological construct used to measure mobile populations in biology and fish migrations.[1]

The analysis of the 17 stages of the EMIF, between 1993 and 2012, accurately portrays the development of the migration process to the United States by Chiapans and their rapid incorporation (Table 3). It is also possible to identify three main stages: the first begins between the years 1993-2005 and is characterized by the rapid growth of emigration from Chiapas to the United States, a flow of 5,417 people in 1993 to 99.227 in the year 2005 -2006. In the second phase Chiapan migrants reach their peak between 2006 and 2007 recording 106.458 moving north. In the third stage, there is a sudden drop of migrants in 2008, and it was during 2009-2010 where an abrupt decrease of flow is recorded in with a count of 16,503. A slight but growing

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1 Migration flows are defined as movements that unite two or more regions (STyPS, CONAPO, INM and COLEF (2006).

surge of migrants in 2012 reached a total of 34,559, which augurs new growth of migratory flows from Chiapas in the coming years.

Table 3. Migrants from Chiapas in the flow of migrants from the South, that target the United States.

Phases		Flow	Phases		Flow	Phases		Flow
I	1993-1994	5,417	VII	2001-2002	16,795	XIII	2007-2008	84,106
II	1994-1995	2,633	VIII	2002-2003	62,061	XIV	2008-2009	65,065
III	1996-1997	1,903	IX	2003-2004	33,016	XV	2009-2010	16,503
IV	1998-1999	4,700	X	2004-2005	51,590	XVI	2010-2011	28442
V	1999-2000	3,848	XI	2005-2006	99,277	XVII	2011-2012	34559
VI	2000-2001	5,494	XII	2006-2007	106,948			

Source: Authors' calculations based on the North EMIF from the analysis of 17 stages conducted between 1993 and 2012

One would have to carefully analyze the figures to elucidate what happened in the northern migration process as factors have changed their behavior (Figure 1). The global economic crisis was perhaps the major factor in slowing migration to the United States, but we would have to investigate other associated variables, for example in the flow of migrants from Central America, as well as answer some questions: Is there an overestimation of the Chiapas northward migration process ? Is there an overlapped and/or confusion over the migratory flows of Chiapans with the flows from Central America?

Figure 1. Chiapans in the flow of migrants from the south that target the U.S. 1994-2012.
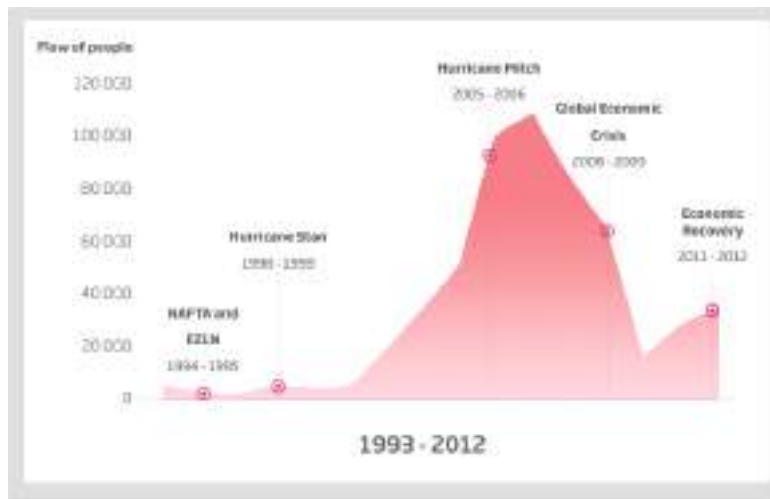
Source: Authors' calculations based on the North EMIF from the analysis of 17 stages conducted between 1993 and 2012 *Note: Phase VIII was omitted from EMIF to present an anomalous behavior.*

II. METHODOLOGY

1 Sources of information. The data presented in this study were drawn from:

- Census population counts and household surveys conducted between 1995 and 2010
- Survey on Migration in the Northern Border of Mexico (EMIF North) and its 17 phases conducted between 1993 and 2012
- Administrative records of births and deaths for the period 1990- 2000
- Other sources of demographic information

2 The balancing equation, a tool to know the social and natural growth of the population. One of the demographic tools to calculate changes in the volume and rate of growth or

decline of a population is the balancing equation, because it measures the effect of the three variables that affect population dynamics, birth, death and migration (Valdés , 2000).

Its formula is:

$$Pf = Pi + CN + CS$$

Where:
Pf = Final population
Pi = Population begins
CN = Natural Growth
CS = Social Growth

$$CN = N - M \quad CS = I - E$$

Where:
N = Births
M = Deaths
I = Immigrants
E = Migrants

III. RESULTS

To apply the balancing equation and determine the effect of international migration on the size of the population of Chiapas, it is necessary to start with the collection of data for the period between 2000 to 2010. The results show that during the first decade of this century there was registered in Chiapas a natural growth of 1,119,620 people (Table 4).

Table 4. Natural and social growth registered in the state of
Chiapas during the period between 2000-2010.

	Initial population		Natural growth		
Year	Pi2000	Year	Births	Deaths	Total (CN)
2000	**4,118,975**	2000	129,867	15,282	114,585
		2001	125,111	15,804	109,307
		2002	125,203	16,447	108,756
		2003	122,130	16,904	105,226
		2004	122,945	16,658	106,287
		2005	120,958	17,427	103,531
		2006	119,152	18,285	100,867
		2007	118,923	18,775	100,148
		2008	115,619	19,551	96,068
		2009	114,315	20,356	93,959
		2010	102,546	21,660	80,886
		Total	1,316,769	197,149	1,119,620

Social Growth				Total net migra-tion	Total growth 2000 -2010 (CT)	Final population
(Without international emigrants)						
Año	Immigrants	Total	Emmigrants	Total	Total (CS)		Pf2010

2000	122,451		336,140				
2001							
2002							
2003							
2004					-65,795	1,185,415	5,172,800
2005		17,984		83,779			
2006							
2007							
2008							
2009							
2010	140,435		419,919				

Source. Authors' calculations based on the XII and XIII General Census of Population and Housing;
Vital statistics, births and deaths from 2000-2010.

Social growth or the total net immigration counting only internal movement was -65.795 people, that is to say that more people left the state of Chiapas than those who arrived during the period between 2000-2010. The overall balance of natural growth versus social growth shows a positive total for the state with 1,185,415 people.

According to this, in 2010 there would be a total of 5,172,800 inhabitants residing in the state, equivalent to the sum of the resident population in the year 2000 plus the total growth over the decade of 2000-2010. However, according to the results of the XIII General population Census in 2010, there were a total of 4,868,748 people living in the state. So there is a shortage or deficit of population in the state which amounts to 304.052 people corresponding to definitive international migration, likely to the United States, giving an average of 30,405 immigrants per year.

This data shows that international migration is not having a negative effect on the stock of the total population, as this continues to grow in a positive way because the number of births is high and compensates for the loss of population due

to mortality and emigration. Although it is probable that some negative effects within the age groups can be observed where some population deficit may be palpable.

In Figure 2 the age and sex structure of the population in Chiapas is represented. It is initially misleading, because it does not show any negative effect on different age groups. Tt appears that there is a balance between men and women which could indicate that there are an equal number of men and women migrating.

Chart 2. Structure by age and sex of the resident population in Chiapas, 2010.
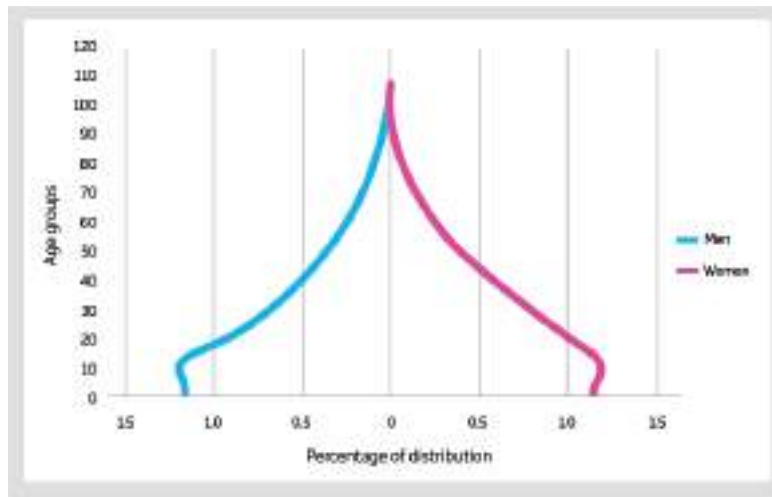
Source. Authors' calculations based on the XIII General Census of Population and Housing.

One might wonder if the trend mentioned in the previous paragraph is real or not. In order to elucidate the above question, Figure 3 was developed where a male gender index is depicted. The indicator shows a clear imbalance in the proportion of men compared to women of productive age between 15 and 65, which reaches the largest deficit between the 25 and 30 years of age cohort where a lower ratio was observed at 90 men for every 100 women.

Chart 3. Gender ratio of residents in Chiapas, 2010
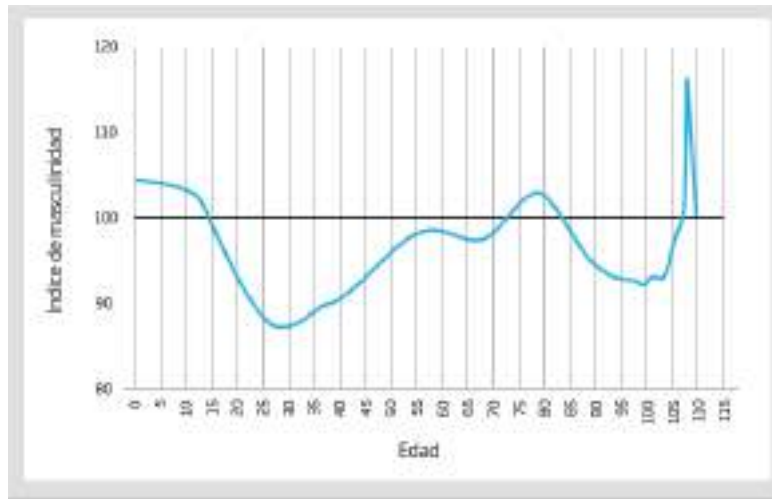
Source. Authors' calculations based on the XIII General Census of Population and Housing.

The male gender ratio of the population living in Chiapas in 2010 lets us visualize the effects that international migration is generating, with the most important undoubtedly being a deficit of men. The consequences of the lack of men in the future will be very important in the labor and marriage markets in the state, which will have to adapt to the new demographic reality of the entity.

IV. CONCLUSIONS

The migration of Chiapans to the north of the country increased during the nineties of the last century, however, the global economic crisis has not allowed it to consolidate. More should be studied in detail about this process in order to determine its dimension in reality. It is likely that the phenomenon has been dimensioned as an effect of the inertia of Central American migration transiting the entity.

The process of migration to the United States begins to have some effects on the age structure of the population. The most important is the lack of men in relation to women which can be seen in the productive age, particularly between 25 and 30 years of age.

It is necessary therefore to analyze in depth the development of migration to the United States from Chiapas in order to have a better understanding of the effects this will have on the demographic situation of the entity.

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PUBLIC POLICY, EDUCATION, TRAINING AND AWARENESS ON GENDER EQUALITY

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ABSTRACT

This paper presents a contextualization and the most relevant results from the perspective of gender on training conducted through the internal network of facilitators and enablers for gender equality and nonviolence in the central sector of the Ministry of Public Education (SEP)of Mexico in 2012, to help build an institution free of gender violence and discrimination.

Keywords: *Public Policies, Equality between women and men, education, gender equality, training on gender equality, gender sensitization*

In Mexico the first steps in mainstreaming gender into the processes of planning, programming and budgeting respond to the international legal framework and derive from the Fourth International Conference on Women held in Beijing in 1995 (United Nations Development Program [UNDP], 2010).

In accordance with the Beijing Platform for Action, the General Act on Equality between Women and Men (art. 5) defines the transversal quality of gender as a process that ensures inclusion of the assessment of the implications for women and men in legislation and in all actions, programs, guidelines, policies, economic, administrative and cultural activities, and public and private institutions at all levels (UNDP, 2010).

In this context, the results of the Survey of Institutional Culture with Perspective of Gender and Non-Discrimination, 2008 (Ministry of Education), showed the existence of situations of inequality between women and men in the central sector of the Ministry of Education and hence the need to promote a culture of fairness and equality between public servants in the federal public administration so that there are more fair and equal workplaces.

This paper presents a contextualization and the most relevant results from the gender perspective, training conducted through the internal network of facilitators and enablers for gender equality and nonviolence in the central sector of the Ministry of Education public (SEP) in 2012, to help build a free institution of gender violence and discrimination.

THEORETICAL FOUNDATION

We start from the conceptualization of public policies and actions that governments choose to solve a collective problem that are considered a "public issue", ie, a problem in the social and political level which is recognized and needs to be addressed (UNDP, 2010).

Evangelina Garcia (2008), after reviewing the literature and experience in the field, said that public policies are products of the political system, and it is principally the State that is responsible for sanctioning the formality that legitimizes their instruments of expression as tools of public policy.

Another element to consider in defining public policies is that they are explicit and are expressed in a public instrument that collects its content in formal documents backed by the authority (García, 2008).

Our definition would be incomplete if we do not determine a common purpose to politics, which is to guide the behavior of a given sector of development and civic life. These policies solve problems or situations that demand attention. Their contents guide and set the course of public action to achieve satisfactory answers and solutions for society (García, 2008).

In addition, gender equality policies are strategies of public intervention that are applied to correct the imbalances that exist between people because of their gender. They are deliberate actions for justice that seek to compensate for disadvantageous positions that develop from gender discrimination that affect women (UNDP, 2010).

According to García (2008), women have been present in some way in the strategies and policies of development, although it was just until recently that their presence was barely noticeable. The consideration of women was not explicit, as they were assumed subsumed in a larger universe of considerations that marked men as the main subject of history and the efforts of the State. The fact is that they are not named.

For decades women were permanently excluded from theoretical references, methodologies and content of development paradigms and strategies. In the end, the female presence was progressively incorporated. In the evolution of care provided by governments to fit their needs, interests and concerns, several stages can be distinguished according to the United Nations

which recounted the 50 years of action since 1945 at the Fourth World Conference Women held in 1995. García (2008) shows a summary of those stages in the following table.

Table 1. Synthesis of the historical evolution of equality policies.

Evolutio-nary phase	Influential facts	Focus of interest in the stage	Common actions
First phase 1945-1962	Adoption of the Universal Declaration of Human Rights	Interest centered on identifying inequalities and in determining the obstacles in achieving equality.	Guided actions almost exclusively to achieve legal equality.
Second phase 1963 to 1975	Approval of the Declaration on the Elimination of Discrimination against women. Appearance of the document "Strategy of International Development for the Second Decade (1971-1980)" which talks about the need for the " full integration of women in the total efforts of development". Celebration of the First Global Conference of the International Year of the Woman, in Mexico.	The right of women to enjoy the benefits of development and to be integrated into the process as a condition to achieve the developments goals and lasting peace.	The start of official responses to the demands of legal equality. First essays about the formulation of policies directed towards women. Changes in attitudes and political promises by the governments related to women. Creation of the first early preliminary institutional structures.

Third phase 1976 to 1985	First Decade of the Woman of the United Nations, in the framework of the International Strategy for Development. Second Global Conference of the Woman, Copenhagen, 1980. Adoption of the Convention for the Elimination of all Forms of Discrimination against Women. 1979. Third Global Conference of the Woman, Nairobi, 1985.	Change in the international awareness on the impact of the situation of women in development, especially through the general phenomena such as poverty, overpopulation, illiteracy, nutrition, and other similar themes. New concept of women as "agents and beneficiaries of the process of development in all of the sectors and at all levels".	Programs developed for women from disadvantaged sectors in order to strengthen their economic productive capacity and elevate basic social capacity. Progressive strengthening of the institutional role of women's issues.
Fourth phase 1985 to 1995	IV Global Conference in Beijing. Global Conferences on the Environment, Human Rights, Children, Population, Human Settlements; Social Conference	Evaluation of the impacts of the efforts. Consideration of the global character that they should have. Appearance of the focus on gender. Relevance of the theme of violence.	Strengthening of Organisms dedicated to women. Public sector policies with attention to women's issues. First plans.

Source: García E. (2008) Políticas de Igualdad, Equidad y Gender Mainstreaming ¿DE QUÉ

ESTAMOS HABLANDO?: Marco Conceptual. San Salvador. UNDP.

The current stage, called the Post Beijing Stage, is characterized by the emergence of important categories of analysis and the implementation of public policies: equal opportunities, human rights criteria, the redefinition of citizenship of women, and

the globalization of actors and processes that contribute to the advancement of equality. At the same time the emergence of the value of diversity in the establishment of policies which pursue comprehensive equality as important dimensions is being raised (García, 2008).

Although as it was just noted, women have been taken into account in public policy, treating their needs or interest in the above stages has gone through various modalities in the second half of the twentieth century and up through the twenty first century. Despite the diversity of policies that have occurred, many decisions and initiatives failed to achieve what is now called substantive equality. They all are identified as "politics of equality", whether this equality has or has not been fully achieved because the purpose such decisions and actions were to have a positive effect on this objective.

Education sector institutions are mandated to promote gender equality and non-discrimination and prevent, address and eradicate violence like any other agency of the Federal Public Administration. There is explicit and direct responsibility of educational institutions to ensure that human rights are respected in the provision of services (UNDP, 2010) since education is intended to achieve the full development of the human personality and to strengthen the respect for human rights and fundamental freedoms (Office of the High Commissioner for Human rights, 2013).

The right to education entails the recognition of the right to equality. In this regard, the Ministry of Education created the Deputy General Directorate of Gender Equality in 2008, which is assigned to the Planning and Policy Evaluation Unit (UPEPE). This entity coordinates its actions with the National Institute for Women (INMUJERES).

The creation of programs aimed at promoting gender equality and non-violence against women has required the allocation of budget items labeled explicitly for these purposes (UNDP, 2010).

Starting with the funds allocated in 11 branch of the Expenditure Budget of the Federation (PEF) of 2008, the SEP strengthened actions initiated four years ago by responding to the obligations of the institution established by the General Law on Women's Access to a Life Free of Violence, the General Act on Equality between Men and Women and the Law of Federal Expenditures 2008 (UNDP, 2010).

Within the programs for gender equality and nonviolence against women, actions were focused on different Responsible Units (UR) of the SEP , some having national incidence and others in the central areas of the SEP (UNDP, 2010).

Regarding the central area of the SEP, the course "Walking towards equality between women and men" is the subject of this study, which responds to ratification by Mexico of international agreements *CEDAW* and *Belem do Para*, which is committed as a State party to take action in order to eliminate all forms of discrimination and violence against women in favor of equal access and full enjoyment of rights and opportunities. This commitment is reflected in the design of public policies consistent with that objective.

GENDER PERSPECTIVE

In academia, movements and feminist organizations, and now in areas of public policy, there has developed a critical, explanatory alternative vision to what happens in the order of genders, created from feminism, which is known as gender perspective(Lagarde, 1996).

This perspective recognizes that women and men are not immutable beings but as socially constructed historical subjects, products of the type of social gender organization prevailing in their society (Lagarde, 1996).

The feminist gender perspective contains proposals, programs and actions against contemporary social problems arising from oppression, gender disparity and the resulting inequities. It is appropriate to analyze and understand *the status of women and the situation of women*, and also to analyze the *male condition and the life situation of men*. In other words, gender allows the understanding of any social subject whose construction rests on the social significance of its sexed body with charge of duties and prohibitions assigned to live, and the vital expertise given through sexuality (Lagarde, 1996). In turn, gender theory is comprised of "theoretical, philosophical, ethical and political approaches needed to understand the complex power relations that determine the inequality between men and women" (Cazes, 1990).

The belief that feminism seeks "the revenge of women on men" undermines their approach by associating it with prejudices about the implications that would achieve greater balance of power between women and men. Following this bias, many people, including public servants, refuse to listen, understand and, of course, endeavor to incorporate gender in their work as a dimension of analysis and study of social problems and solutions of public policy (National Institute of Women, 2008b).

In order to correct these biases, the basis of the relationship between gender and feminism is outlined. Gender is a category of analysis. Feminism is a political and theoretical movement that questions the social order and inequality of opportunity between women and men. Both concepts are not synonymous but are related, because the former is a theoretical tool that uses feminism to bolster their arguments, showing the political and ideological character of inequality between women and men.

The fact that gender is a tool used by feminism does not mean that is coincides with the political and theoretical positions that guide the various current political expressions in feminism.

Like any movement, there are diverse, even divergent, political positions.

The ideals of feminism do not tout the "revenge of women" but the recognition of diversity and the adoption of the principles of equality and equity as guiding principles of social interaction and the work of governments and the state. The standard of these values is raised by women and for many who are sensitive and aware that a better gender balance benefits society and future generations (INMUJERES, 2008b).

The perspective of gender equality permits the analysis of belief networks, personality traits, attitudes, feelings, values, behaviors and activities that differentiate men and women, and are the result of a historical process of social construction. Socialization covers all instances through which humanity integrates and incorporates slogans and determinations of the social structure in which it interacts- charged with the transmitting, shaping, maintenance or perpetuation of values, beliefs and attitudes that influence and contribute to modes of thinking and acting in people (Delgado, 2003).

In the work environment of the SEP, we found the expression of beliefs, attitudes and behaviors that demonstrate the disadvantaged and violent situation for women. Because of this, in 2008 INMUJERES developed a gender training and professionalization program for workers and public servants in order to consolidate the rule of a common language and create a proactive attitude for the implementation of gender mainstreaming into government processes and routines. Work was divided on two fronts: sensitizing and specialization in order to institutionalize the gender perspective in public policy. The purpose was to incorporate this perspective in the policies of training human resources in the public sector as an ethical value and constantly updating work ability.

GENDER TRAINING AND SENSITIZATION

A central strategy of this program is multiplication, which concentrates efforts in the training of facilitators in federal, state and municipal agencies to act as multipliers on gender, human rights and violence prevention. The objective of this strategy was to take advantage of spaces and merge with the training units of public agencies to extend the understanding of the basic contents of gender awareness and incorporate them as part of the training pool of human resources in public institutions (INMUJERES, 2008a).

Gender violence is a field of particular importance for awareness as it is recognized as a symptom of inequality between women and men as a strategic area for state intervention. Raise awareness in the literal sense is the ability to experience sensations as perceived from the senses. Raising awareness on gender implies then that those who design, implement and execute programs and public policies-that is to say those who judge, administer, develop budgets, make decisions, define guidelines for hiring, among other activities of institutional activities- see, hear, smell, taste and touch the reality and the problems of gender inequalities and inequities. Hence, awareness is developed as an excellent tool for creating awareness through reflection and address hidden or naturalized aspects in the power relations between individuals and social groups. As a learning strategy, it is a consciousness-raising activity that removes indifferent attitudes to social problems, favoring action, and seeks to challenge prejudice through reflection and knowledge (INMUJERES, 2008a).

Sensitization seeks to have the participants reflect in reference to the "feminine" and "masculine", the asymmetries and inequalities in order to generate processes of change on both the personal and institutional level in order to shape policies,

programs and projects with a vision of equality and equity for women and men (INMUJERES, 2008a).

A basic principle of this approach is working with social beliefs about gender. Sensitization is presented as an educational and learning process that affects four dimensions:

a) Beliefs and personal experiences.
b) Beliefs and prejudices of society.
c) Information based on concepts and data.
d) The practice or application of knowledge to solve specific situations.

Sensitization requires individual work, collective reflection and the assimilation of information which provides conceptual tools and reviews conduct and behaviors on an individual and collective level, focused on the eradication of practices that we want to move and transform (INMUJERES, 2008c).

In this proposal, awareness is considered an open, creative, flexible, trigger of individual or group processes of analysis and reflection, and constitutes a starting point to stimulate the implementation of gender mainstreaming in the entire process of public policy (INMUJERES, 2008a).

Sensitization is the first phase of capacity building. Through this experience, subjects and the group move from the position of receivers to agents that transform reality. The optical repertoire is amplified and the perceptions and feelings of the subject to be learned is extended: the valuation of feelings in the acquisition of knowledge (INMUJERES, 2008a) arises.

The sensitization of gender, as a basis for teaching, took place during the course "Walking towards equality between women and men", through which personnel from the central sector of the SEP were trained in the period between 2009-2012. It was an action taken from within the component of "training and staff development", which led to the programming framework

for institutional actions and specific programs of the SEP on the topic of gender equality and non-violence against women.

The said course is a specific action performed by the Module of Orientation, Prevention and Gender Violence (MOPAV), which opened in December of 2008 in the structure of the Unit for Planning and Policy Evaluation (UNDP , 2010).

The Module offered free and confidential services to all staff of the central sector of the SEP in two areas:

- Prevention- through dissemination of materials, workshops, conferences, exhibitions, etc., that promoted the culture of denouncement, denaturalization, and eradication of institutional violence.
- Psychological and legal assistance to workers in situations of domestic violence who requested the service (UNDP, 2010).

The training workshop "Walking towards equality between women and men" was part of the area of prevention. Its purpose consisted in participants reflecting on the concepts related to equality between women and men, their effect, and progress in order to reach them, with the goal of recognizing their benefits in their personal, work and social life. It was designed based on the Program of Institutional Culture and according to the results of the Survey of Institutional Culture Perspective of Gender and Non-Discrimination, 2008.

The Institutional Culture Program (CIP) 2007-2012 (SEP, 2010) raised nine strategic objectives , addressing the following topics:

1. National policy and institutional duties.
2. Work environment.
3. Inclusive Communication to promote gender equality and non-discrimination.

4. Recruitment without discrimination.
5. Wages and benefits in order to eliminate disparity gaps between women and men.
6. Vertical and horizontal promotion , encouraging the development of the capacities of all people.
7. Professional training with a gender perspective.
8. Stewardship between work, family, personal and institutional life.
9. Harassment and sexual harassment. Mechanisms for its elimination.

The questionnaire of Institutional Culture and Gender Perspective and Non-Discrimination, 2008 (Ministry of Education) was designed according to the program of Transparency and Accountability through theme 6b called "Non-discrimination and gender equality". The Ministry of Education, as a member of the National System for Equality between Women and Men (SNIMH) and the National System to Prevent, Treat, Punish and Eradicate Violence against Women, through the Executive Coordination of the National Institute for Women , applied the questionnaire mid-year in 2008 to personnel working in the Secretariat as part of a joint effort and projects to promote policies, programs and actions on gender equality and equal opportunities.

In compliance with the guidelines for the implementation of Institutional Culture Questionnaire with the Gender Perspective in the Federal Public Administration, a report of the main results was delivered to INMUJERES according to the formats requested by the Institute. The analysis and deepening of these results was given to the Unit of Planning and Policy Evaluation (UPEPE).

In these results, the highest rated factors were: III. Inclusive Communication. V. Wages and benefits VIII. Reconciling work, family and personal life. On the other hand, those factors with a lower grade and in which special attention was given are: II. Work

climate IV. Recruitment VI. Vertical and horizontal promotion. VII. Professional training IX. Harassment and sexual harassment.

Regarding recruitment, in April of 2003 it was published in the Official Journal of the Federation the Law on Professional Career Service in the Federal Public Administration- a design based on the guiding principles of legality, efficiency, objectivity, quality, impartiality, fairness and capacity based on merit. It was implemented as a means of income for civil servants of the SEP. However, the results reveal that 71.9% of respondents admitted to joining the institution through direct contracting and only 4.3% reported having entered through the Professional Career Service. This is consistent with the perception of staff, who are convinced that recruitment is done on the basis of personal relationships within the institution, without having knowledge, skills and abilities as a basis for candidates to occupy vacancies during recruitment. This situation can be disadvantageous to women, who occupy a minimum percentage of middle management positions and who have shown to be equally prepared and trained as men.

Another important element is the social roles assigned to women and men who are in part-time positions as assistants, secretaries, teachers, and so on. This becomes an outstanding indicator for the analysis of the selection process that is influenced by patterns of perception that place women in the private space caring for and ensuring the needs of others, despite equal skills and academic preparation.

Women generally have at least three jobs: paid work, domestic work and care of the children. The latter demands time off from work since the period of pregnancy and becomes a factor, according to respondents, that involves benefits and special permits: maternity leave, feeding hours, nursery, among others. Therefore, preference is often given to men in positions of greater responsibility and longer hours.

The situations described above are some examples that are part of the total results of that the questionnaire referred to and show the existence of situations of inequality between women and men, together with the need for training activities that promote a culture of fairness and equality in relationships between all civil servants of the Federal Public Administration.

Consistent with this statement, in 2010 the Unit of Planning and Policy Evaluation of the SEP, in coordination with the Directorate General of Personnel, through the Institutional Coordination and Monitoring MOPAV, based on Articles 153- a and 153-E of Chapter III Bis of the Federal Labor Law and Article 45 Fraction XI of the General Law on Women's Access to a Life Free of Violence, convened to participate in shaping the *internal network of facilitators for gender equality and nonviolence in the* SEP with the aim of conducting activities and training such as workshops, lectures, conferences, film debates in the different areas of the central sector of the SEP, to contribute to building an institution free of gender violence and discrimination.

I responded to that call and was accepted to participate in the multiplication of the course "Walking towards equality between women and men" , a role I have had since 2011.

Experience in network of facilitators added to the recognition of violence against women as a violation of human rights. The knowledge of the advances in the exercising of rights and of international and national legislation, led me to wonder if the course "Walking towards equality between women and men", in the context of educational policies, contributed to gender equity within the SEP, and if so, in what ways it was influenced.

It is this questioning that motivated this investigation that was conducted during the master's program in Higher Education, called Educational Policy Analysis on gender equality and as part of the course outcomes of "Walking towards equality between women and men", which was given to public servants in the central sector of the SEP.

METHODOLOGY

A non-experimental quantitative approach was used; In addition, the research design that was conducted was a transversal and descriptive study. The cohort totaled 60 participants that attended the course during 2012 during a training I taught as part of the internal network of facilitators and enablers for gender equality and nonviolence in the Ministry of Education, through the course "Walking towards equality between women and men".

The non-probabilistic sample consisted of a total of 36 people: 56% from the Department of Higher Education (SES), 22% from the Directorate General of Budget Management and Financial Resources (DGAPyRF) and 22% from the General Coordination of Intercultural Bilingual Education (CGEIB).

I designed a questionnaire for the staff that I trained during 2012, which measured the following variables: I. gender sensitization. II. Benefits in personal, work and social life. III. Institutional conditions for the course.

The aforementioned survey was conducted in November of 2013, 36 people responded: 19 men and 17 women. Of these, 33% were single and 61% married, whose ages ranged from 35-65 years of age. Education ranged from secondary school to graduate level.

RESULTS

The results of the investigation, obtained through the use of the questionnaire for operating personnel trained in the course with respect to the variable of gender awareness, was that less than half of the people correctly identified the concept of equality in relation to equity, as reflected in the following graph:
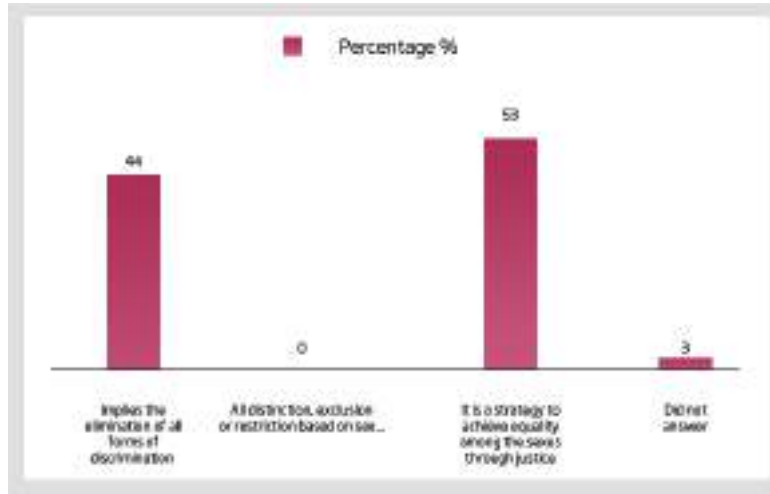
Figure 1. Concept of equality

Figure 1 shows that there were fewer people who correctly identified the concept of equality. The correct notion is "implies the elimination of all forms of discrimination in any area of life that is generated by belonging to either sex," according to Article 6 of the General Act on Equality between Women and Men. Also, the greater the number of people who identify equality with the concept of equity is conceptualized as follows: "It is a strategy for achieving gender equality through justice. Sets compensation mechanisms to ensure that women and men have the same opportunities, rights and responsibilities; equal access to resources, benefits and state services, and achieve a balanced distribution of power, "according to the General Coordination for Gender Equity Program of Judicial Power of the Federation. In addition, it was null the number of staff identifying equality with the definition of discrimination against women that refers to: "Any distinction, exclusion or restriction based on sex which has the purpose or effect of impairing or nullifying the recognition, enjoyment or exercise by women ", based on Article 1 of the Convention on the Elimination of All Forms of Discrimination against Women, CEDAW 1979.

Strengthening the understanding of the concept of equality indicates an area of opportunity in training through the course "Walking towards equality between women and men", while the understanding of this concept relates to the identification of discrimination and violence against women as affectations and obstacles to achieving equity and equality.

In relation to the same variable (gender sensitization) The following chart explains that, according to the opinion of most people, Mexico as a member State to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), had carried out concrete measures to eliminate discrimination against women.
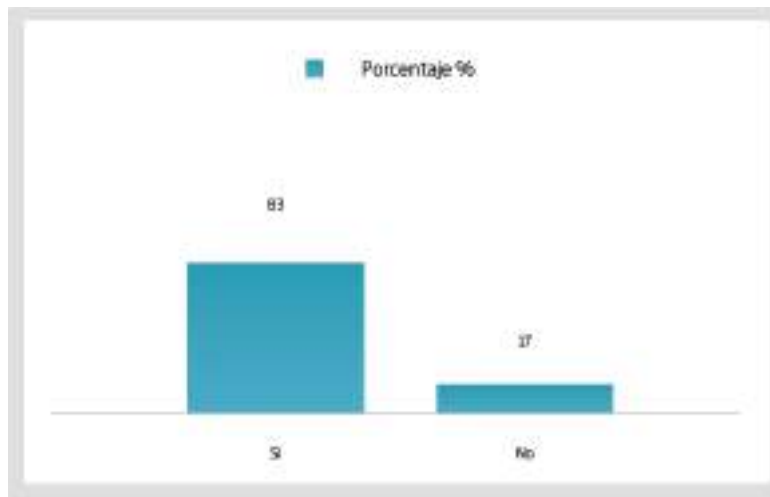
Figure 2. Opinion on measures to eliminate discrimination against women in Mexico

Furthermore, with respect to the variable: benefits in personal, work and social life, participants responded with their own words describing the following benefits: "I knew how it was before and how women are treated now".

"Coexistence of respect among my peers," "to come to agreements", "share ideas and rights between men and women", "learn about laws and conventions in favor of women", "before we

act, think or meditate" "education," "better working environment" as the following graph reveals:

Table 2. Benefits in personal life, work and social, regarding equality and equity.

Benefits	Scale				
	Totally agree	Agree	Disagree	Totally disagree	No answer
Share responsabliity for house work	73%	16%	5%	5%	
Excercise civil rights	72%	19%	0%	6%	3%
Greater opportunities for political partici-pation	64%	25%	3%	8%	
Greater opportunities for well paid jobs	61%	22%	8%	8%	
Practice sexual and reproductive rights	58%	25%	6%	11%	
Relationships free from discrimination and violence	67%	14%	11%	6%	3%
Enjoy coexistance and the care of children	78%	17%	0%	6%	
Share responsibility to provide money for the home	69%	25%	0%	6%	
Resolve conflicts without violence	86%	3%	6%	6%	
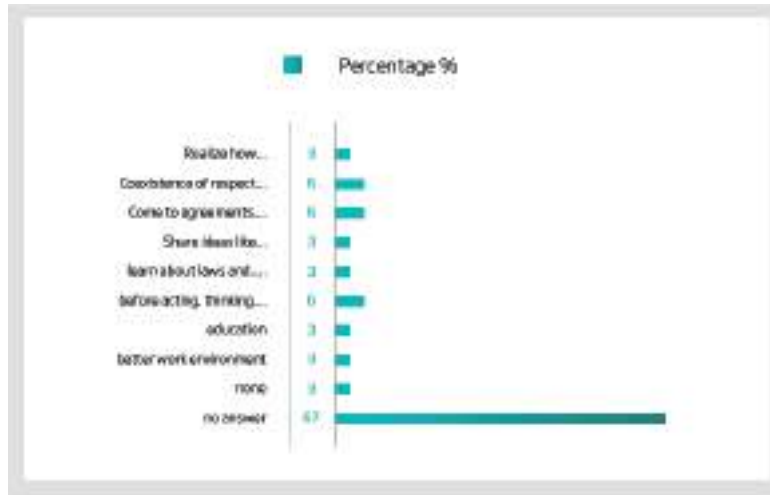
Figure 3. Benefits in personal, work and social life

Also, compared to the same variable, the benefits that participants selected are focused on the previous table.

Results show that they totally agree to share responsibility for domestic work, which repeats for the possibility of greater civil rights, bring greater opportunities for political participation and opportunities for well-paid jobs, exercising sexual and reproductive rights, relationships free of discrimination and violence, greater enjoyment in cohabitation, caring for children and sharing the responsibility of providing money for the home and resolve conflicts without using violence.

Regarding the variable related to the institutional conditions for completing the course, figure number 4 indicates that most participants received timely information.

Here we can see the means used to disseminate the course "Walking towards equality between women and men", in descending order, were: statement by memo to staff, email, through a workmate and poster on a bulletin board.
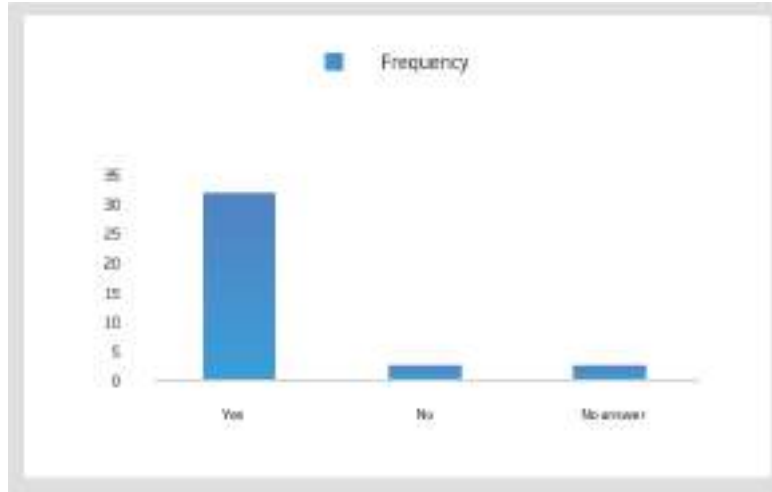
Figure 4. Timing of course information
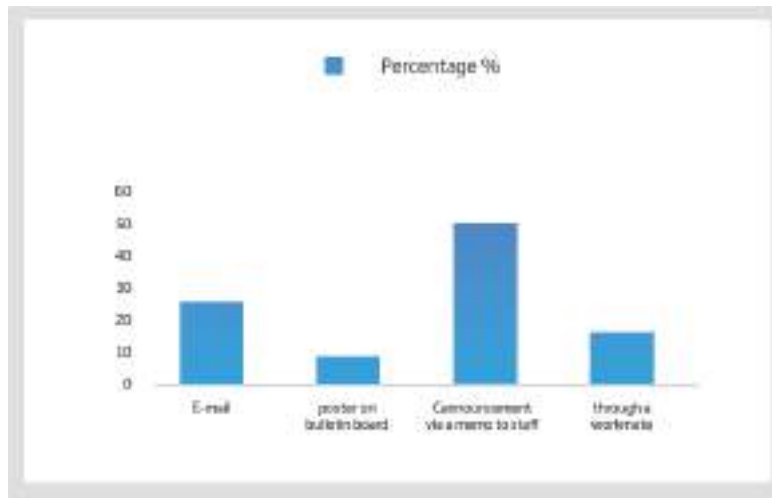
Figure 5. Means for the dissemination of the course

The chart below shows that most people recommend the course "Walking towards equality between women and men".

Therefore, the results of the variable related to the institutional conditions for the completion of the course were seen as positive.
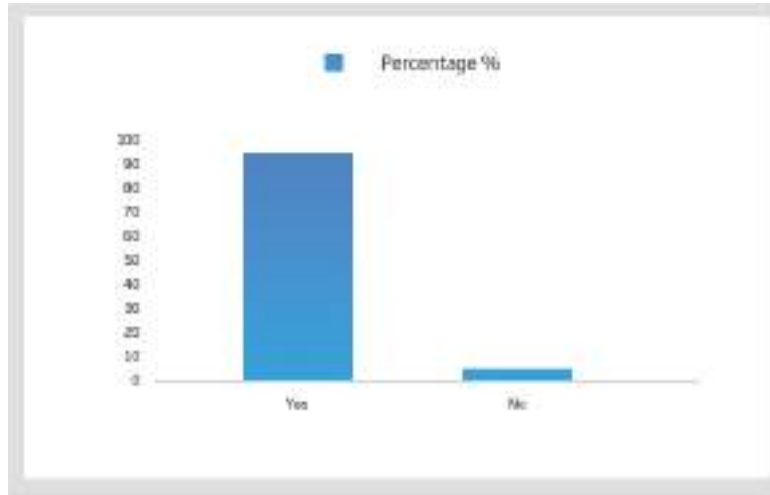
Figure 6. Recommendation of the course

CONCLUSIONS

The course "Walking towards equality between women and men" contributed to different training units of the Ministry of Education, revealing the basic contents of gender sensitization and incorporating them as part of the training supply of human resources of Public Administration.

In addition, the dynamics of participation attended to sensitization as a tool to raise awareness through reflection and address hidden or naturalized aspects in the power relations between individuals and social groups (National Institute for Women, 2008) to recognize progress on equality between men and women, as well as the way ahead to follow.

Also, the course content is structured according to the regulatory framework that conceptualizes equality from the perspective of human rights as an autonomous human right that should not be understood as the similarity of skills, merits or physical qualities of human beings . It is a must , a set value to the recognition of human diversity. In this regard, the State

must guarantee it and promote it and be actively involved in the elimination of all forms of discrimination against women (OHCHR, 2013).

Operations were also conducted under the action plan of the 2009-2012 Institutional Culture Program of the strategy of the federal government, which ran the National Women's Institute, and aims to transform the Mexican public institutions in fairer and equal workplaces with a human face, which will result in increased productivity, effectiveness and efficiency among public servants and will help to reduce the still persistent inequality between women and men (National Institute for Women, 2009).

The proliferation of courses via the *internal network of facilitators and enablers for gender equality and nonviolence in the* SEP, which was offered by the MOPAV, was a step towards equality between women and men. Of the most relevant results that we discussed in this article, we can see that although the participants were able to identify the concepts of equity, discrimination and violence against women, there was a deficiency regarding the concept of equality.

Also, the perception of most participants is that in Mexico concrete measures are undertaken to eliminate discrimination against women.

The benefits in personal, work and social life, regarding equality and equity, was where there was total agreement. Those with a higher percentage are: resolving conflicts without using violence, greater enjoyment in living and care of the children and shared responsibility for domestic work and exercise citizen rights.

The above shows some of the progress made towards equality through MOPAV, as well as unmet needs and the pathway that we have yet to travel, and the amalgamated responsibility for education and collaboration to foster environments free from discrimination.

With the change of the presidency in Mexico, the MOPAV disappeared. This raises the relevance of the following questions: how to improve what was done if it not longer exists as such? In other words, how to improve the public policy of the previous administration, if it no longer exists?

Regarding the training of the staff of the Secretariat of Public Education, both administrative staff as well as their support form an important part in the education sector. Because of its function, they maintain close contact with students and teachers, fathers and mothers, so it is essential to participate in training processes according to their profiles to develop skills, abilities and knowledge regarding gender equality. Therefore, it is essential that the training of teachers provides them with the skills, technques and methodological elements necessary to promote equality between women and men in the exercise of their professional practice at all educational levels.

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STUDENT PARTICIPATION IN THE EXTERNAL EVALUATION PROCESS, AN ELEMENT OF CONSOLIDATION IN THE CULTURE OF QUALITY OF THE BENEMÉRITA AUTONOMOUS UNIVERSITY OF PUEBLA.

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ABSTRAC

This paper discloses the results of an investigation that has as one of its main objectives the determination of students' knowledge of the Benemérita Autonomous University of Puebla the processes regarding external reviews which are conducted on the bachelors programs, as well as on the quality of education that they are receiving. The investigation was conducted using a quantitative approach, with an instrument of 86 items to 300 students at three educational programs at the bachelor's level. The data were analyzed through a positive reaction algorithm and the inferred statistics were obtained as a result which indicate that there is disinformation and a lack of student involvement regarding the quality of their education, its evaluation, and impact in their professional development.

Keywords: *Educational inclusion, attitude, knowledge and teaching practice.*

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One of the main tasks in universities is to produce students that can be inserted, adapt and influence effectively in the workplace and to guarantee society that these students have the necessary elements to develop professionally. The Mexican Federal Government over the past two decades has implemented various educational policies aimed at improving the quality in higher education. One of them concerns the evaluation of educational programs of Higher Education, through the National Assessment and Accreditation of Mexico comprised of groups that evaluate individuals, educational programs and entire institutions at different levels.

In the specific case of the evaluation of undergraduate degree programs there are two instances that determine their quality. On one hand there is the Interagency Committee for the Evaluation of Higher Education (CIEES), composed of seven committees from different areas of knowledge that conduct evaluations through academic peers that assign a level (from 1 to 3, level 1 being the highest recognition). Secondly there is the Council for Higher Education Accreditation A.C. (COPAES) that supports 29 accreditation bodies from different areas of knowledge for the accreditation of programs. These awards are reflected in the Register of Good Quality Programs issued by the Sub Secretary of Higher Education. It should be noted that accreditation by a body recognized by the COPAES and Level 1 CIEES are equivalent in quality. Moreover, the Sub Secretary of Higher Education, within the Program for Strengthening Quality in Educational Institutions (PROFOCIE), formerly called the Integral Institutional Strengthening Program, notes that a Good Quality Program must have nine essential elements (SES, 2009) .

- A wide social acceptance of the thorough training of graduates.
- High degree or graduation rates.
- Competent teachers in the generation, transmission and

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application of knowledge, organized in academic bodies.

- Updated and relevant curriculum
- Processes and appropriate and reliable instruments for assessing learning.
- Timely services for individual attention and groups of students.
- Modern and sufficient infrastructure to support the academic work of teachers and   students.
- Efficient management and administration systems
- Social service articulated with the objectives of the educational program.

This means that any program renowned for its quality should have the aforementioned points and likewise be palpable to the university community and to society in general. The universities that have good quality programs have as one of their main objectives to provide better training of their students.

From the point of view of the Benemérita Autonomous University of Puebla (BUAP) and in accordance with the University Model Minerva, the student is the main agent in the process of constructing knowledge, as a human being with desires to evolve with the possibility of identifying strategies that will best work to achieve their own learning.

Similarly, it is stated that the needs of the students are the starting point for developing educational experiences. It is in them that there exists is a constant search for a balance between personal knowledge and curriculum knowledge. This will facilitate the student to take responsibility for their own learning (MUM, 2009), with students being the direct recipients of these benefits. How informed and involved are students regarding the quality of the educational programs at BUAP? While all of the evaluable degree programs offered by the BUAP are renowned for their quality, this article aims to show the importance of promoting the participation and knowledge of students regarding the quality of

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their degrees. Students are often unaware of these issues, so the student opinion was taken as a means of verification in accordance with what external agencies state compared to the perception of the students.

From the point of view of Zhao Xiaoyang (2012) universities have to adopt to the suggestions of the students as a bridge of communication, as this information can contribute to the improvement of higher education by taking into account the experience that students live day to day in their degrees-although various positions state that student assessment is subjective and not always attached to reality. Similarly, Escudero (2003) mentions that the object of the evaluation process in higher education is to determine the change in students, but its function is wider than only making explicit this change to the students, parents and teachers. It is also a means to report on the effectiveness of the educational program. In this sense, if the objective of the evaluation is to determine the change in the students, then you have to involve them to generate greater awareness on the issue of educational quality.

On the other hand Leite, Santiago, Sarricò and Polidori (2006) believe that students are not traditionally seen as actors capable of evaluating assessment processes and that their views could have been simply ignored because of their interference with the professional experience of academics. With the vast majority of students, evaluation processes are considered a source of external information. However, these authors argue that students have the ability to assess, especially when it comes to training. In turn Carilli (2000) notes that student satisfaction with the institution is one of the most important indicators of institutional effectiveness.

ANUIES (ANUIES, 2012) in their paper "Inclusion of Social Responsibility", aims to design among all actors involved in the development of higher education in Mexico, a strategy that makes it possible to have a model of assessment to promote academic

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development with a reliable system of information in which the participation of institutions and actors to be evaluated in the design and implementation of assessment tools is required.

Within the process of the improvement and quality assurance in universities can be found a consolidation phase. The evaluation practices of educational programs have shifted from being a natural day to day process in Institutions of Higher Education to becoming mechanized. The Bricall report submitted in 2000 states that the desirability of measuring and evaluating the quality of teaching, research, services and organization was no longer a debate on college campuses because they are already common practice and widely accepted in universities. Rather the characteristics and each of the specific aspects of evaluation should be cause for analysis. (Bricall, 2000: 360)

According to this, it is important to look at the Benemérita Autonomous University of Puebla to see how students perceive the quality of the programs that they are taking, and their participation and knowledge about assessment processes and issues regarding quality education. Through this analysis, the consolidation of a culture of quality is favored that allows the development of a better institutional diagnosis.

METHOD

The following section describes the progress made with a focus on a quantitative character. It is presented as an evaluative-explanatory-descriptive study that yielded information on the existing relationship between the dependent and independent variables expressed in Table I. These variables were made up the theoretical basis of the investigation, which were mainly established by the objective of determining student perception and satisfaction with the quality of their education programs. It is a non-experimental cross-sectional study.

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Subjects and population: Population refers to the students of the Benemérita Autonomous University of Puebla that belong to quality programs, the Economic-Administrative Divisions of Higher Education (DES in Spanish) and DES of Natural Sciences.

The size that encompasses the three educational programs is 1200 students. The proportional sample of the number of students for the investigation consisted of 293 students, with a 95% confidence level, margin of error of 5%, and a level of heterogeneity of 50% .

It is an intentional probabilistic sample, as it took into account certain requirements for the inclusion with particular characteristics regarding assessment practices and the admission period of the educational programs. Three educational programs were selected out of fifteen from each DES, which were recognized as quality programs. Their characteristics for inclusion were: date of creation: a recently established program, an established program, and an older program. The second point was that they counted with a history of evaluation. The selected programs were: the Economic-Administrative DES, two education programs, Communication Sciences (newly created), Public Accounting (older program) and Pharmaceutical Chemistry/Biology(median creation). In the following the characteristics of each are described.

The Public Accounting Program has been offered since 1937 and is regarded as the best educational program for their awards in quality, obtaining Tier 1 from CIEES in 2000, and accreditation by the Accreditation Council on the Teaching of Accounting and Administration A.C. (CACECA) in 2008 and once again obtained Tier 1 in 2010 through CIEES. It is the first bachelor's BUAP to be evaluated internationally in 2013.

The Program in Communication Sciences is a relatively young program (offered since 1997). Its first recognition of quality came in in 2002 by the National Council for Education and Research in Communication Sciences (CONEICC) , which granted accreditation to the degree. In 2008 the program was

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under evaluation by academic peers from CIEES, and obtained Tier 1 status. In 2010, the programs quality was ratified by the Accreditation Council for Communication (CONAC).

In the case of DES of Natural Science, the Pharmaceutical Chemistry/Biology Program offered by the Faculty of Chemistry, has CIEES Tier 1 accreditation, and was also accredited by COMAEF (Mexican Council for Accreditation of Pharmacy Education A. C) in 2013. Offered since 1965, it was chosen for the proper monitoring and attention they gave to the recommendations by the external agencies. The model was followed by all the other degrees, and thus there was an implementation of monitoring and attention to the recommendations in a systematic way on an institutional level.

Table I. Type of variables.

INDEPENDENT	DEPENDENT
Socio-demographic profile	Perception of quality education
Academic profile	Processes of evaluation
Own resources	Institutional management
Institutional resources	Teachers role
	Satisfaction of the service
	Curriculum

Source: own resource

Data collection was conducted through a survey type questionnaire with 86 items. The instrument was analyzed statistically using Cronbach's alpha, obtaining a value of 962, demonstrating the reliability and consistency of the items.

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STATISTICAL RELIABILITY		
Cronbach Alpha	Cronbach's Alpha base on element type	No. of elements
.962	.960	86

Data collection was conducted through a questionnaire type survey. The design was performed using a base of a consistency matrix in which the research questions, objectives, variables, definition (operationalization of the variables) and possible items for each were reflected. The result was in a questionnaire of 86 items distributed into two parts, which determined the content of the independent and dependent variables and the number of items for each variable, as shown in Table II.

Table II. Number of items per variable.

VARIABLE	NUMBER OF ITEMS
Socio-demographic profile	7
Academic profile	5
Own resources	3
Institutional resources	2
Perception of quality education.	6
Processes of evaluation	8
Institutional management	19
Teachers role	14
Satisfaction of the service	12
Curriculum	10
total items	**86**

Source: Own resource

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The data obtained were analyzed using a mathematical algorithm that extracts the percentage of the relative frequency of positive responses to the results issued by the students. In order to make a judgment evaluation, a rubric analytical1 type scale was designed that determined the development phase of the dependent variables according to the student's perceptions.

This article only reports the results of the variable external evaluation process, where knowledge and active student participation in the processes of external evaluation carried out at the university was measure of its faculty and specifically its educational program. In this way there was the dissemination of results of evaluations or accreditations, raising the assumption that students are involved and know about the processes which their educational program is submitted.

According to the assumptions that students know and are involved in processes of external evaluation, it can be said that: The perception of students regarding this category reveals that student participation in these processes has not allowed them to contribute fully to the educational program.

Although students perceive the BUAP as a university nationally renowned for its quality, they do not share the same opinion when the same question is made regarding its faculty and its program. This means that students recognize the institutional quality but it is not palpable is their degrees in a fundamental manner.

Furthermore, involvement in the processes of external assessment by students is still in a developmental phase. You can assume that there is a certain level of student misinformation that

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1 Scale for the design of the rubric
 80-100% Excellence phase
60-79% Grounded estimate with very good results
40-59% Reactive Approach -there is a good approach to plan
20-39% Development of the processes of educational services to achieve goals phase
0-19% Initial stage for implementing the necessary changes to the PE.

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exists even in these evaluation processes, even though majority do not participate the dissemination of the results is acceptable with a reactive approximation.

It's necessary to work on student participation in the evaluation processes before, during and after the evaluations. This limits the knowledge and contributions they can make, which can also be seen reflected in the evaluation made by students if communication between faculty who benefit their training obtains a 44% positive reaction, in the same manner the dissemination of information on the evaluation and accreditation processes obtained a 47% positive response in a reactive approximation, as shown in Table No . III

Table III. Processes of external evaluation and their impact on participation and training of students (% of Positive reaction)

	Variables in the Category of External Evaluation Processes.	No.	Media	% with a positive answer	Evaluation criteria
1	Communication that benefits education	293	3.17	44	Approach factor
2	Information flow (Evaluation-accreditation)	293	3.26	47	Approach factor
3	Actions that improve/benefit PE	293	3.41	51	Approach factor
4	Knowledge of PBC indicators	293	2.96	40	Development phase
5	Involvement in external evaluation	293	2.87	35	Development phase

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6	Your faculty disseminates the results of the evaluation process	293	3.29	50	Development phase
7	BUAP obtains prestige and recognition	293	4.24	80	Founded approach phase
8	Directors promote participation in the evaluation processes	293	3.25	47	Approach factor

Evaluation Criteria: 81- 100% Excellence phase, 61-80% Grounded Approach Phase,
41-60% Reactive Approach, 21-40% Development Phase,
0-20% Initial stage of implementation

A Student T test was also performed. This type of analysis allows for an assessment of the hypotheses through an analysis of statistical inference for the comparison of means. The Student T test for one sample compares the mean of one variable with a known value or hypothesized value with a confidence interval of 95% for the difference between the mean of the variable and the hypothesized test value as μ ,with values of 3, 3.5, 4 and 4.5. as shown in Table No.IV.

Determining the following significance scale:

VALUE	INTERPRETATION
4.5-5	Excellent****
4.0-4.4	Very Good***
3.5-3.9	Regular**
3.0-3.4	Acceptable*
<3	No acceptable

The criterion for validation are: t> 1.96 Ho is rejected.,
t <1.96 Ho is not rejected., And finally, expressed with (*) the value μ (mu)
is used for the expected value of a variable

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From the statistical inference there is a more precise assessment of the perceptions of students, so valued outcomes through student T show that during the bachelor programs information is provided about the external assessment processes (evaluation / accreditation) of the educational program. From these communication mechanisms benefits in the services to students develop which in turn creates better training opportunities. These three variables are shown in a range of acceptability. In other words, the information they receive is not sufficient, therefore the actions for improvement are less. Despite being recognized by students, they still do not have a high level of significance.

Another point addressed in this category has to do with the knowledge that students have regarding indicators that integrate a Good Quality Education Program. It was found that students do not know the quality indicators of their educational program, which is related to a lack of information provided prior, during and after these processes.

Paradoxically, though students do not know the elements of a quality program , they do recognize the BUAP has academic recognition and a national reputation, but without knowing what educational quality refers to. Of the 86 items, this is the one which received the highest evaluation criteria with μ 4.

The fact that students do not know the indicators that measure the quality of the educational programs has to do with the open participation of students in the construction of the evaluation, the visit and delivery of results. Many times the only students who participate are selected for the interviews performed by the evaluators. However it is necessary that the information flows in all directions regarding all of the processes, and is not only disseminated with some students.

Similarly, when the results are shared with the students, they are aware of the awards for quality without knowing what they are and what was the process was to obtain them. It is necessary that directors promote and encourage the interest of students

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in these processes that will benefit their professional training, since from the student point of view directors are not promoting participation.

In general, for this category we can say that most of the variables are measured only in an acceptable way, not on a good level. Only one variable with an average of 4.24, and two variables with not acceptable values indicate that external evaluation processes that are conducted in educational programs are not having a significant impact in relation to the expectation of the BUAP, as shown in Figure I. Where the highest level or desired expectation about the results of the external evaluation would be a rating of 5 and the T calculated determines a globally acceptable value.

Tabla IV. T student impact on the processes of external evaluation

No.	Item	N	Media	T	Sign.	Validation Criteria[2]
1	Communication mechanisms that benefit services	293	3.17	3.031	.003	Acceptable*
2	Information given to the processes of external evaluation of the PE	293	3.26	4.054	.000	Acceptable*
3	Actions that improve the educational retro alimentation processes and allow improved professional development in the PE	293	3.41	7.625	.000	Acceptable*
4	Knowledge of the indicators that form a good quality education program	293	2.96	-.637	.524	No acceptable
5	Involvement in the external evaluation processes in the PE	293	2.87	-2.079	.039	No acceptable

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6	Dissemination of the results of the processes of evaluation of the PE	293	3.29	4.756	.000	Acceptable*
7	The BUAP has the academic recognition and prestige on a national level	293	4.24	5.065	.000	Very Good***
8	Directors promote participation in the processes	293	3.25	3.987	.000	Acceptable*

Graph 1. Impact of the processes of external evaluation
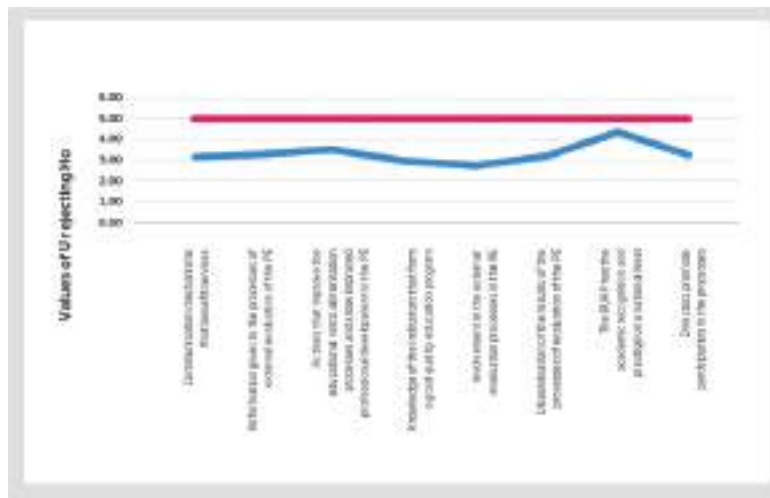
CONCLUSIONS

It can be concluded that, although educational programs are recognized for their quality through external evaluation, and students identify the BUAP with national prestige, there is a gap of knowledge and student participation in evaluation processes. While some participate indirectly, such as in the interviews conducted by external evaluators, beyond these interventions it

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is concluded that there is a need to disseminate and implement various strategies to keep students informed about what external evaluation represents to the benefit of their training, the elements that are assessed and the results that are obtained.

It is essential to take into account the views of students, not only because they provide valuable information of measurable quality indicators, but to meet their needs in compliance with the institutional mission and their professional development.

The lack of student participation in the processes of external evaluation is a factor that is affecting the way students value the quality of their educational programs, if the students have the necessary information on issues of educational quality and evaluation they can form student awareness, enabling feedback based on the quality of their training by students and graduates of the BUAP .

Finally it is proposed that at the institutional level, faculty and educational programs develop outreach and training, including extracurricular activities that address issues of educational quality; workshops on developing quality indicators given by institutional experts and guests who can share their experiences are developed in other national and international contexts; that there is an exchange of educational quality practices which generate greater co-responsibility in students, as well as links that will allow a contrast to the reality experienced by students, visualizing changes generated through evaluation and new trends that denote educational quality. There should be simultaneous y comparative studies performed periodically, and monitoring of student assessment to visualize changes in perception of educational quality issues.

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EDUCATION, VIOLENCE AND CONTRACEPTION IN UNWANTED PREGNANCY. *MESTIZA* WOMEN IN SAN CRISTOBAL DE LAS CASAS, CHIAPAS. MEXICO

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ABSTRAC

This study is part of a qualitative investigation in San Cristobal de Las Casas, Chiapas, Mexico. This investigation is based on interviews with Mestizo (having Spanish and Indigenous ethnicity) women who were born in San Cristobal or had immigrated to the city and who have a high school or higher degree, who have experienced relationships of power related to unwanted pregnancy. The expectations of marriage as a social mandate, emotional dependence and submission in order to avoid violence are among the reasons that lead to non-consensual sex that includes difficulties in negotiating anti conceptive methods.

Keywords: *Gender, violence, education, contraception, unintended pregnancy, abortion.*

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The Alan Guttmacher Institute noted that in Mexico in the 1990s, 40% of pregnancies were unintended while 17% of them ended in induced abortions (Guillaume and Lerner, 2006). As a result of demographic changes in the country, which led to a declining fertility rate of 5.6 children per woman in 1970 to 2.2 in 2006, the proportion of unwanted pregnancies would nevertheless increase despite family planning policy, registering an increase of 64% in the number of induced abortions which rose from 533,000 in 1990 to 875,000 in 2006. There was also an increased abortion rate from 25 per 1000 women aged 15-44 to 33 per 1000 in the same period (Juarez et al, 2008:. 2-12). Refined estimates grouping all states by region indicate that the rate would be 38 per 1000 women for Region 6, which the least developed region where Chiapas is located, it was found to be between 25-27 per 1000 women- one of the lowest rates when compared with the rest of the country (Juárez and Signh 2013, 25-35). It can be said that in general, induced abortion is evidence that the pregnancy was unwanted by the woman, without the fact that continuing through to delivery is guaranteed that was desired.

From a demographic perspective, unintended pregnancy is defined as one that occurs when it is not wanted, regardless if contraceptive protection was used or not. It   must be distinguished whether a pregnancy was desired by inopportune or if it was absolutely not desired (Committe on Unintended Pregnancy, 1995: 22). This way of conceptualizing the problem, however, has been criticized because it is not applicable to all contexts. In addition, the intention of the pregnancy and desire is poorly correlated when it comes to knowing what happens at the individual level (Zabin, et al, 2000: 39-45, Sable and Libbus, 2000: 191-196, Poole, et al, 2000: 179-182, Stanford, 2000: 183-189, Santelli et al. 2003: 94-101).

Some studies have documented the role of ambivalence that leads some women to be inconsistent with contraceptive use or its absolute absence.(Sable and Libus, 2000: 191-196; Zabin, 2000:

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39-45). In this regard, eroticism of risk, fantasies about the desire to have a child with a particular partner linked to sexual pleasure and therefore unprotected sex in both women and men, reveal the importance of the satisfaction of immediate emotional needs at the expense of long-term goals such as avoiding pregnancy (Higgins, 2008: 130-137). Several studies have highlighted the important role of men and stability of the relationship as determinants of desire and the destiny of pregnancy by women, so that if there was no emotional or financial support, it was more likely that the pregancy was rejected (Kroelinger, et al., 2000: 112-119, Zabin, et al., 2000: 39-45). Desire can also change during pregnancy in response to what happens in context and significance for women, so a pregnancy that was initially desired may become unwanted or in contrast may be accepted later (Sable and Libus, 2000; Kroelinger, et al, 2000; Poole, et al. 2003: 179-182, Zabin, et al, 2000)...

An association between unintended pregnancy and violence in the relationship has also been documented. Results of a large sample obtained from the database of the Pregnancy Risk Assessment Monitoring System (PRAMS) in the United States, showed that the birth of the child verses the desire of women was higher among those who had reported violence 12 months prior to and during the pregnancy, as opposed to those who did not, and it is more common in socially vulnerable women, African Americans, minors, the unmarried, those living in overcrowded conditions or those who had less schooling (Goodwin et al, 2000: 85-92; Saltzman et al. 2003: 31-43.). Violence is also more frequent among those who decided to abort and did not report thier decision to the man or who had induced repeated abortions (Woo et al, 2005: 1329-1334; Fisher et al., 2005: 637-641.). Physical or sexual abuses suffered in childhood, as well as growing up in a dysfunctional home, were also associated with the presence of unwanted pregnancy in adulthood (Dietz et al., 1999: 1359-1364).

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In Latin America, supportive role or the of males according to material, normative and symbolic context in which occur intimate relationships, conditions their co responsibility in contraceptive protection as well as the desire or lack thereof of women due to the pregnancy (Tolbert et al., 1999, Llovet and Ramos, 2001, Bankole et al., 1998 cited by Guillaume and Lerner, 2006). According to a study conducted in Colombia, dating violence remains a significant association with unintended pregnancy, so much so that each year approximately 32,500 to 45, 000 of unintended pregnancies would not occur if the first were eliminated (Pallito and O 'Campo 2004: 165-173). While Mexico has not investigated the association between violence and intended pregnancy, the information that is available has shown that there is a continuum between the abuse suffered in childhood and later in adulthood, so that the pregnancy would have been rarely the initiator of violence (Castro et al, 2003: 110-1116; Cuevas et al., 2006: 239-24.).

The association between unwanted pregnancy and partner violence has been documented mainly among women with more social disadvantages and those with less education (Geldstein, et al., 1997: 121-131, Rickert, et al., 2002: . 178-183, McCloskey, et al, 2005, Dan Vung, et al, 2008). A few studies, however, **found that violence can also occur among more educated women** as the traditional gender roles for women has transitioned. (Burazeri, et al., 2005; Gómez Dantes, et al., 2006).

What circumstances could put women with an average of higher education, and apparently with more power, in the position to live with an unwanted pregnancy? The study presented below was part of a project with qualitative methodology that aimed to help clarify this issue between indigenous and mestizo women in a medium city in Chiapas, in southern Mexico.

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METHOD AND SUBJECTS

Following informed consent, twelve mestizo women were interviewed in the period from 2006 to 2008. Seven of them were born in San Cristobal, and five were immigrants from various Chiapas municipalities and states, who generally grew up in this city. The key question was "how do you think this unwanted pregnancy happened?". Of the twelve women, nine decided to terminate the pregnancy and three continued until the birth of the child.

CONTEXT

San Cristobal de Las Casas, Chiapas

Throughout the last century the need for land and the generally difficult living conditions coupled with structural violence imposed on the indigenous peasants migration in the region of "Los Altos" ("The Highlands") with a high population density, to other regions of the state, and to the city of San Cristobal de Las Casas. This migration soared starting in the 1970's, (Viqueira, 2005: 219-236, Aubry, 2008: 111-146, INEGI, 2003: 21-36). During that process, indigenous women came to this city in many cases alone and to escape domestic violence, but also with the idea of improving their lives and breaking away from the customs of their hometowns (Freyermuth and Manca, 2000: 203-228 ; Álvarez al, 2012: 395-423). At the same time, mestizo women came from other municipalities as well as from other states to study or work, according to the narrative of the interviewees.

The Catholic religion has played a major role in a relatively isolated region of Los Altos and San Cristobal de Las Casas, its principal urban center (Aubry, 2008: 111-146), influencing the rules of coexistence, whose rigid sexual division of work

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legitimizes gender inequities. However, this has been modified in varying degrees before the strength of the economic and cultural transformations. The continuous migratory flow of different social groups and even different nationalities toward San Cristobal from the second half of the twentieth century ,has turned the city into a cosmopolitan space that along with the mass media have contributed to the secularization of local customs.

The development of the municipality of San Cristobal, has an average annual rate of population growth1 from 2000 to 2010 of 3.3%, and is one of the highest in the state (INEGI, 2011: 4). The increase in the proportion of women with basic education and are incorporated into the labor market and have access to contraception, have led to a significant change in family size and probably a lowered desire for pregnancy. According to the XII General Census of Population and Housing 2000 and main results of the Census of Population and Housing 2010, the average number of children in Chiapas of women aged 15-49 years decreased in those years from 2.40 to 2.0. A similar situation has been recorded in the municipality which went from 2.05 to 1.8 within the same period, which would have occurred primarily among women with secondary or higher level of education (INEGI, 2008: 41).

It is important to note that in the area of reproduction, inequitable gender norms have remained since tubal ligation in the state has been registered at the highest prevalence with 55.6%, while the use of condoms, withdrawal and vasectomy have had the lowest prevalence, 3.7%, 1.7% and 0.9% respectively (INEGI, 2005: 52-67). Regarding the desire for pregnancy, a study in slums of the state capital of Tuxtla Gutierrez and San Cristobal de Las Casas, showed that up to 50% were outright rejection, disagreement or indifference to it by the members of the couple, without the knowledge to if contraceptive methods would have been an obstacle in the occurrence of the pregnancies (Nazar and Salvatierra, 2008: 1-16).

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RESULTS

Mestizo women residents in the city

In this study the age of the respondents were located in a range between 20-37 years old. Most had a high school education especially among immigrants, and some had performed graduate work in public institutions. More than half were employed, some according to their profession. Those who took care of household chores were almost all students with a child (a) or had a family member in their charge. Only five were in a relationship, two were in the process of separation and the remaining five were single, most were dating. All were self-described as Catholic.

Women from the city come from homes where their parents were mostly teachers- one of the few professions that has allowed an improvement in living conditions in a marginalized region- or they were small local entrepreneurs who lived with some comforts, or small scale artisans. Immigrant women from families of peasants, workers and government employees, were from border towns and the coast of Chiapas and the states of Puebla and Oaxaca. Although there was an explicit prohibition of engaging with a partner before finishing studies, the majority of those originating from San Cristobal became sexually active before age 20, while immigrants generally after that age.

The fact that they were women with a high school education or higher, having sometimes a job and own income, as well as having the support of their family, did not exempted them from being abused by an intimate partner (jealousy and control by the male, threats to their security, have felt pressured to drink alcohol, having been humiliated, receiving slapping or shoving, that the man cheated with another woman, suffering from his lack of emotional and financial commitment towards them and their children, even abandonment). In general in the group of women from San Cristobal, all with a high school education or higher, it

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was often that the men would impose their conditions and they assumed hegemonic and unequal gender roles. Among women with a university education or higher, especially with immigrants, the above situation was less common and in more than half of these they negotiated so that in crises they could impose varying degrees on their own terms.

Regarding sex life, only four of the respondents, a third of all, mentioned that their relations were consensual and therefore respectful of their wishes and were pleasant, which corresponded with those who maintained a relatively fair relationship. Two were from San Cristobal and two were immigrants, usually among those that had higher levels of education within their respective group. For the rest, sex was accepted as another example of attention by the man, and in order to avoid rejection or even violence.

It is noteworthy that half of the respondents, especially those who were from San Cristobal, reported having used oral contraceptives that sometimes they forgot to take. On the other hand immigrants with higher education predominantly used condoms and the rhythm method with some variation such as Billings or withdrawal. Two of the women were born in the city, one sixth of the entire sample. One had already had two children and did not use any form of contraceptive protection, while only one respondent of the total, an immigrant, used the emergency contraception pill.

Regarding unwanted pregnancy

Regardless of the level of education, in the aspects of sex and reproduction, three quarters reported abuse of power by men who imposed their conditions and they were subordinated, therefore they were not always able to control the timing of sex. This, coupled with the inconsistent use of effective contraception and trusting in other less secure methods such as rhythm, withdrawal

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or simply not using any contraception occurred in a situation where they hardly had control, which was also complemented by the low responsibility of men, who were inconsistent with the use of condom or who simply refused to use them.

—"Yes, I never had problems of that I wouldn't want to have sex or not. Always. So sometimes felt tired, I would tell him, for the sleeplessness [for the care of small children], but always, I mean … I was with him " "If he did not want a third child , did he do something to take care of the situation, meaning that he use a condom? (interviewer).

—No. No, no, no … I mean … I had to do everything because he could not do anything. "(**Alicia, San Cristóbal, 26 years old**).

—"Yes. Really … even until today … I do not know how to say no and do not know why. Although … although I do not want to, even though I don't want to, even though I really … I don't feel comfortable … no. I only used pills, but I did know what to say to him … I would not tell him. I think I failed, or maybe not … or being so worried, sometimes I was I was already really crazy. "(**Cristina, San Cristóbal , 20 years old**).

—"Right now I'm realizing that sometimes a week before I got pains … seven, eight days before I got my period, then I would consider … I think they are still days … fertile [referring to the rhythm method], but it … what happened had to happen. And yes I was a little upset with myself and him because … because it has already happened to us sometimes and … we continue with the same but that night I could not say "no", that is "no, I do not want to, I was afraid "… umm …" Its best that we don't take the risk "… no" (**Elsa, 29 years old, originally from Oaxaca**).

Thus unwanted pregnancy is explained (1) by the emotional dependency of women toward their partners and / or (2) to avoid rejection and even to avoid further violence in a regular context where the wife and mother is the natural step and leading role it expected from all women.

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When there was a relationship with a relative equality, in this case in a quarter of the respondents who generally had a higher level of education, unwanted pregnancy was a result on some subjective level: (3) an excess of overconfidence and therefore the fact of believing in their own invulnerability, as well as the denial of the risk or perhaps of the probable eroticism of intercourse without contraceptive protection, as noted by Higgins (2008: 130-137).

In the city of San Cristobal de Las Casas, Chiapas the desire for more children seems to have declined, which implies that more women have had to pass a longer period of their reproductive life without conceiving and therefore, have needed to further protect themselves to avoid an unwanted pregnancy. The use of contraceptives, however, would not have had to increase, judging by the continuity in the proportion of Chiapans who use them- 53.5% in 1997 and 54.9% in 2009 (INEGI, 2010). This also explains the fact why family planning policy is no longer a priority for Mexico, when the population is approaching replacement level, as has been suggested by Juárez and his collaborators (2008).

But even when contraceptives were widely available, women have found a barrier to prevent pregnancy in conservative customs of the city and the "should" of hegemonic gender roles, which have been modified , but generally maintain the sexual division of labor and the symbolic violence that legitimizes male domination and its counterpart- the subordination of women. Such subordination does not allow them to position themselves assertively and control their body, which is expressed in a specific way in each social group and would likely result in an increase in unwanted , and perhaps unsafe, pregnancies and induced abortions.

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DISCUSSION

For decades it has demonstrated the existence of an association between female education and fertility decline (Cochrane 1979; Caldwell 1982; United Nations 1987, 1995; Cleland and Rodriguez 1988; Jejeebhoy 1995; Jeffery and Basu 1996; National Research Council 1999, cited by Bongaarts, 2003: 321), Jejeebhoy and Sathar (2001: 678-712) suggest that this happens because education generates in women the ability to make decisions, to control various resources, to access knowledge , to free mobility and therefore more equitable relationships in their families. McRobbie (2010: 113-135), however, undermines the egalitarian role of education for women in the context of globalization and the dismantling of social achievements, recreating gender norms under new light.

By relying on education in the economic and sociocultural contexts, the role of norms and values that define the "should" of hegemonic gender roles are internalized in ways of feeling, thinking and doing by women and men, and precisely for not being questioned, would in general be less important in reference to sexual and reproductive behavior. It would not be surprising, then, that despite the level of education, the cause of unwanted pregnancies was primarily female subordinate subjectivity to the sexual desires of men where nonconsensual intimate relationships, would be another unrecognized form of violence, as other studies have shown (Santhya, 2007: 124-132, Goodwin et al. 2003: 31-43, Saltzman et al. 2003: 31-43, Pallito and O'Campo, 2004: 165-173) and (Tolbert et al, 1999; Llovet and Ramos, 2001; Bankole et al, 1998; cited by Guillaume and Lerner, 2006). Nevertheless, through education respondents had an alternative draft of their own lives to the traditional roles- which seems to have played a role in the delay of conceiving and in the making of decision in their own best interests.

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CONCLUSIONS

Focusing the solution of the problem only on more information and access to contraceptive protection is insufficient before a context marked by gender inequalities, class and ethnicity. Besides the access of women to all levels of education, it is necessary to socially conditions that enable alternative projects for a wife and mother, that lead to an improvement in their living conditions. Modifying sexist attitudes in all areas of daily life, particularly those having to do with the mass media that largely model those same behaviors to a good degree, as well that violence against women does not go unpunished, are fundamental to changing social norms and erecting new subjectivities between men and women. Finally, since there will still be unwanted pregnancies, it is essential to review the legislation that limits women's access to safe and legal abortion in Chiapas and currently restricts the exercise of their sexual and reproductive rights.

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ACADEMIC

PAPERS

DATABASE MANAGEMENT WITH POSTGRESQL LABORATORY 1. USER CONTROL

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ABSTRACT

The number of Databases Administrations with PostgreSQL laboratories demonstrates in a practical manner this type of system which is widely used in the software development industry. Databases are the tools that businesses require to store the information that they generate, and it is in this type of system where the information is stored. Hence there is an importance of understanding and applying standard management concepts used in the industry. The PostgreSQL system is used because it provides the mechanisms that other similar systems have but are proprietary systems. PostgreSQL is provided under a license, which permits from the point of view of the owner of an information system the avoidance of paying expensive licenses for the use of a database.

Palabras Claves: *Database Administration, SQL, stored procedures programming, postgreSQL.*

This series of six Database Administration (DBA) laboratories is a starting point to know in detail the features offered by the PostgreSQL system. This is an object-relational database system that has the features of the traditional systems database . PostgreSQL is free and the complete source code is available. This last characteristic is the most attractive for developing enterprise applications for the Latin American market, since it avoids paying expensive licenses. The software and documentation are provided under the PostgreSQL License (http://www.postgresql.org/about/licence/), which is similar to the BSD or MIT licenses. The labs are designed to provide the concepts and skills necessary to know the system function in detail, and offer the "copy and paste" function from the Windows operating system to reduce the effort of the reader in preparing the work environment and in solving problems.

The section called "additional work" requires the reader to apply the experience gained in solving problems related to the central theme of the laboratory. The basics section shows the syntax of the commands and gives some explanations of their use. This material is taken from the PostgreSQL System User Manual which is available on the tools official website. In some cases it was taken from the official site in Spanish. The basic concepts are applied around a project called "ACME University", which is the product of the author's imagination as well as the practical solution of the problems that are presented. The books that are available in the reference section serve for consultation to support some of the concepts that are applied in the practice of resolving database administration problems.

These laboratories are prepared to give practical experience to students taking the Administration Database course in the Computer Systems degree offered in the School of Accounting (SOA) located on Campus IV of the Autonomous University of Chiapas (UNACH). In the SOA we have at least 14 years of experience in using PostgreSQL in classrooms, research projects

and systems that have been implemented to automate the daily activities of the SOA. As a result of these academic and industrial experiences, laboratories which are used in classrooms were obtained in order to train our students. We have found that students are motivated to study when these exercises are defined in abstract ideas and are explained in the classroom, although this will be the subject of another article. It has also been reported that they are a resource for graduates who work in the business sector.

As has been previously mentioned, the tool has features and standard programming languages that proprietary systems offer, so that examples can easily be applied to other database systems on the market or can serve as reference in the application of concepts in industrial projects. They also can serve as reference for computer science professionals.

OBJECTIVE

The reader will learn to manage groups and users accessing a database, and to grant and revoke privileges in order to limit their activities using the tools offered by the PostgreSQL database management system.

PREREQUISITES

It is expected that the reader has previous experience in the use and conversion of Entity-Relationship (ER) diagrams. The themes associated with the Database Design issues are not covered in this document. It is also expected that the user has basic knowledge of the SQL programming language.

It is necessary to install the PostgreSQL database version 9.3 on the Windows operating system, and verify the requirements for installation on the official website of the tool:

www. postgresql.org. The system can be downloaded from the website: ttp://www.enterprisedb.com/roducts-services-training/pgdownload#windows

PARTS OF THIS LABORATORY

1. Project to develop
2. Basic concepts
3. Preparation of the working environment
4. Problem solving
5. Additional work
6. References

I. Project to develop

The exercise consists of a project that describes a business dedicated to providing educational services: After reading the text the ER diagram is generated with the solution to this problem. Continue with creating tables and population of the tables in order to finally work with user and group permissions.

ACME University Project
En UACME, se ofrecen dos tipos de cursos en el periodo especial de verano, en que se imparten cursos de verano y cursos extracurriculares. Los primeros son materias que un alumno regular que estudia una carrera cursa en este periodo, se le permite adelantar hasta dos materias; mientras que los segundos son cursos especiales de capacitación que se ofrecen a alumnos regulares como estudiantes o profesionistas externos.

In UACME, two types of courses are offered at the special summer period when summer courses and extracurricular courses are taught. The first are courses that regular students studying

an undergraduate degree are taking during this period. You are allowed to take up to two subjects to advance; while the latter are special training courses that regular students or external professionals may take.

Teachers of UACME are the only ones who are allowed to teach these courses. They receive an additional payment, paid in accordance with a tab that indicates the cost when these courses based on performance level the teacher. Payment is generated from the revenue of the course and only one check is allowed to be issued for each course. In addition, students must additionally pay for the cost per semester in order to attend.

UACME has two departments involved in the administration of the courses:

A) Department of Administration (DA) and B) Department of School Control (DSC). DA corresponds to making the payment to teachers and charging the students fees. The DA is led by C. P. Avila and is assisted by Mr. Cancino. The DCE is directed by Lic. Barroso and assisted by Ms. Tirado, Martinez, Aquino and Ramos. This is where what courses are taught in the period are decided, who imparts the courses, and where the student applications are accepted. A special case is that of the Professors, since the DA's are those who can modify their biweekly salary, while the DCE cannot even see this. The strange thing is that the DCE is the one who accepts teachers and logs into the system, but the DA is where the salary is captured. It is important for the management of the UACME that this policy is strictly followed, and is implemented directly on the DB. The following describes in detail the tables to which personnel have access.

Tables that are allowed access to the staff of the Administrative Secretary: Checking Account, Checks, Tabulator, Teachers, Concept, Receipt, Receipt detail.

In special cases this department can access tables for Special Courses, Summer Special Courses, Extracurricular Special

Courses, and the Extracurricular Course List. It is explicitly prohibited to modify any field or record.

Tables that are allowed access to the School Secretary staff: special courses, extracurricular courses, subjects, Summer extracurricular courses, students, bi mester, absences, school calendar.
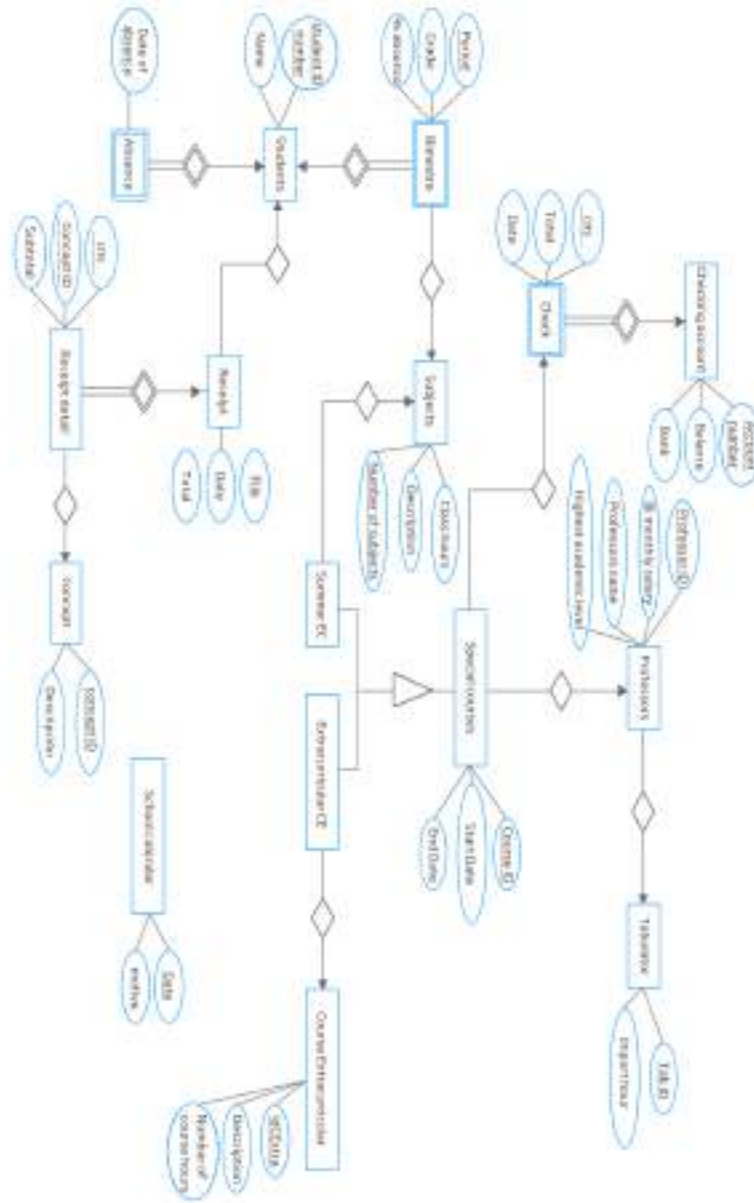

Figure 1. Diagram E / R that solves the previous problem

II. Basic concepts

Here is a modified version of PostgreSQL user manual which gives an explanation of the use and syntax of the commands used in this laboratory. To see the official manual in English visit the website.

Managing User Accounts

As an administrator of PostgreSQL, you may be responsible for creating user accounts and groups. Perhaps you are also responsible for granting and revoking privileges.

In most environments, there is a one to one mapping of the identity of users in the operating system and in the PostgreSQL identity. In effect, your username in PostgreSQL is often identified with your operating system username.

In some cases other configurations are useful. For example, you might want most users to identify themselves uniquely by providing them with a guest account. You may also have a client application that identifies itself but rarely identifies the user (this is useful for applications that are executed by a user within an authentication provider).

A user account is shared between all the databases within each given cluster. User groups are also stored across all databases within a cluster.

Benefits (CREATEDB and CREATEUSR)

When a new user is created, you can control some of the activities they perform in the database, such as permission to create new databases. You can also control the activity of creating new users. Giving the user the right to create new databases or create new users is risky. When you assign privileges to a user with CREATEUSER, that user becomes a super user on the cluster. It must be said that this is a slightly different way: a user who has privileges CREATEUSER can overcome all restrictions on the cluster database. You can explicitly deny privileges to

CREATEUSER specifying NOCREATEUSER. NOCREATEUSER is assumed if another value is not specified.

CREATEDB options give the user the right to create new databases (within the cluster). You can specify NOCREATEDB to prohibit the user to create new databases. If you specify no NOCREATEDB CREATEDB, CREATE USER assumes NOCREATEDB.

Group management

You can define user groups to make administration much easier. Each group may include users. Each user can get to belong to one or more groups. When granting or revoking privileges for an object, you can identify a specific user or group of users.

Each user is a member of a PUBLIC group automatically. PUBLIC is really a virtual group. It cannot add or remove members and cannot delete this group but it can allow associating privileges to PUBLIC.

The groups are much easier to handle if they match the roles in the organization. For example, maybe you can build groups named developers, guests, cashiers and managers. Groups must be arranged so that they reflect the real world; groups make it much easier to assign privileges on objects in the database. A given object can belong to many groups. For example, a member of the developers may also belong to the administrators.

The group definitions are stored in the system tables. As users of the database, the group definitions are stored for the entire database within a cluster.

CREATE GROUP

A PostgreSQL super user can create a new group using the CREATE GROUP command:

```
CREATE GROUP group_name [ [WITH] option [….] ]
```

The group name must meet the rules for identifiers in PostgreSQL (31 characters or less, quotation marks, or start with a letter or underscore). You can include an SYSID value if you want to assign a numerical identifier for the new group. We know each user group by name, but some table that refers to the group will refer to the numerical value. Perhaps assign a specific numeric identifier for a group for the same reasons that are assigned a specific identifier for a user.

You can assign a member to a group of three ways:

- Use the IN GROUP option in the CREATE USER command
- List the names of users in the CREATE USER GROUP option
- Change the group using the command ALTER GROUP

A typical command , CREATE GROUP, will perhaps look something like this:

```
CREATE GROUP developers USER Bernardo, lety;
[ [WITH] option]…
```

This command creates a new group named developers that initially has two members: Bernardo and Lety.

Create Users

There are two ways to create a new user: CREATE USER command running from a client application (such as a psql), or the createuser shell script.

The full syntax for CREATE USER command is:

```
CREATE USER username
[ [WITH] option]…
```

```
option := SYSID user-id-number
| [NO] CREATEDB
| [NO] CREATEUSER
| IN GROUP groupname[, …]
| [ [UN] ENCRYPTED ] PASSWORD 'password'
| VALID UNTIL 'expiration'
```

A user-name must conform to the usual rules for PostgreSQL identifiers: this must start with a letter (or an underscore) and must be 31 characters long. If you need a username start with a number, just enclose the name in double quotation marks.

Views

The views are pseudo-tables, ie, they are not real tables, however they appear as ordinary tables to select. A view can represent a subset of a real table, selecting certain rows or columns from an ordinary table. Even a view can represent multiple joined tables. Because the views are assigned permissions separately, you can use them to restrict access to a table. The views are created using the CREATE VIEW command.

Creating rules
Syntax

```
CREATE RULE name AS ON event
TO object [ WHERE condition ]
DO [ INSTEAD ] [ action | NOTHING ]
```

name - The name of the rule to create.
event - Event may be select, update, delete or insert.
object - Object is either *table* o *table.column*.
condition - Any clause, SQL WHERE, New or Current, can appear instead of an instance variable whenever an instance variable is permissible in SQL.

action - Any SQL, New or Current clause can appear instead of an instance variable whenever an instance variable is permissible in SQL.

Description

The PostgreSQL rule system allows an alternative action to be performed on updates, inserts or deletes on tables or classes. Currently rules are used for implementing table views.

The meaning of a rule is that when an individual instance is accessed, updated, inserted or deleted, there is a current instance (for queries, updates and deletes) and a new instance (for updates and additions). If the event specified in the ON clause and the specified condition in the WHERE clause are true for the current instance, the action part of the rule is executed. First, however, the values of the fields of the current instance and / or the new instance are substituted for the current *attribute-name* and new attribute-*name*.

The action part of the rule executes with the same command and transaction identifier as the user command that caused activation.

Notes

Caution with SQL rules. If the same class name or instance variable appears in the event, the condition and action part of the rule, they are all considered different tuples. More precisely, *new* and *current* are the only *tuples* that are shared between clauses. For example, the following two rules have the same semantics.

```
ON UPDATE TO emp.salary WHERE emp.name = "Joe"
DO UPDATE emp ( ... ) WHERE ...

ON UPDATE TO emp-1.salary WHERE emp-2.name = "Joe"
DO UPDATE emp-3 ( ... ) WHERE ...
```

Each rule can have the optional tag INSTEAD. Without this tag, the *action* will be performed in addition to the user command when

the event in the *condition* part of the rule appears. Alternately, the *action* part will be done instead of the user command. In the latter case, the *action* may be the keyword NOTHING.

When choosing between rewriting systems and instance rules for a particular applications of a rule, remember that in the rewrite system, *current* refers to the relationship and some qualifiers whereas in the system of instances refers to an instance (tuple). It is important to note that the rewrite system never detects nor process circular rules.

It is necessary to have permission to define rules in a class in order to define a rule in it. You must use the GRANT and REVOKE commands to change these permissions.

The object in a SQL rule cannot be a reference to an array and cannot have parameters.

Aside from the "oid" field, the system attributes cannot be referenced anywhere in the rule. Among other things, this means that the functions of instances (for example , foo (emp) where emp is a class) cannot be called anywhere within a rule.

The system stores the rule text and query plans as text attributes. This implies that the creation of rules may fail if the rule together with its various internal representations exceed some value which is on the order of one page.

III. Preparation of the working environment

To apply the concepts described in this laboratory it is necessary to have a database in which to apply the restrictions required by the project work.

Creating Tables
The tables in this section are created by applying the conversion rules to the ER model as related to the ER diagram in section 1. This lab does not attempt to explain those rules.

Schemes for the ER diagram ACME University

The names of the fields in some cases were changed with respect to the ER diagram, based on sizes of the name. However, the concepts are the same.

> AcountChecking(naccount, balance, bank)
> Check (naccount, cns, total, date);
> Tabulator (idtab, amount, hour);
> Professors (idprofessor, idtab, name, maximum, salary);
> SpecialCourses (idcourse, idprofessor, cns, fini, ffin);
> ExtracurricularCourses (idextra, decextra, nhourscourse);
> Subject (nmat, des, hourcourse);
> ECSummer(idcurso, nmat);
> ECExtracurricular (idcurso, idextra);
> Students (tuition, name);
> Bimester (tuition, period, nmat, grade, absence);
> Absences (registration, date);
> Concept (idconcept, desconcept);
> Receipt (folio, registration, daterec, totalrec);
> Receiptdetail (folio, cns, idconcept, subtotal);
> School Calendar (date, reason);

Tables for the E-R diagram at ACME University

The following commands to create tables, insert data and create privileges must be executed using the postgres user (user default) and you must change the user until it is explicitly stated. If during the installation of PostgreSQL, you haves not created a shortcut for the psql program, it can be found at the following address: C: \ Program Files \ PostgreSQL \ 9.3 \ bin and then you can build the shortcut. Run the program PSQL postgreSQL (Shell postgreSQL) and "copy" each of the following commands and "paste" in psql.

```
-- Creating the database UACME
uacme create database;

-- Switch from the BD default to the ACME (in PSQL)
\ c UACME

--Creation of the tables
create table AccountChecks (
naccount int,
numeric balance (7.2),
varchar bank,
primary key (naccount)
);

create table check (
naccount int,
cns int,
Total numeric (10,2),
Date date,
foreign key (naccount) references AccountChecks,
primary key (naccount, cns)
);

create  table Tabulator (
idtab int,
amounthour varchar,
primary key (idtab)
);

create table Professor (
idprofe int,
idtab int,
varchar name,
maximum varchar,
salary float, foreign key (idtab) references Tabulator,
primary key (idprofe)
);
create table SpecialCourses(
```

```
idcourse int,
idprofe int,
fini varchar,
ffin varchar,
naccount int,
cns int,
foreign key (idprofe) references Professors,
foreign key (naccount, cns) references Check,
primary key (idcourse)
);

create table Extracurricular courses(
idextra int primary key,
decextra text,
nhourcourse int
);

create table materials (
nmat int,
des varchar,
hourcourse int,
primary key (nmat)
);

create table ECSummer(
idcourse int primary key,
nmat int,
foreign key (nmat) references Subject
);

create table ECExtracurricular (
idcourseint primary key,
idextra int,
foreign key (idextra) references ExtracurricularCourses
);

create table Students (
int enrollment,
```

```
varchar name,
primary key (registration)
);

create table Bimester (
int period,
int enrollment,
nmat int,
int grades,
Absences float,
foreign key (nmat) references materials,
foreign key (enrollment) references Students,
primary key (tuition, period)
);

create table Abscences (
varchar date,
int enrollment,
foreign key (enrollment) references Students,
primary key (registration, date)
);

create table Concept (
idconcept int,
desconcept varchar,
primary key (idconcept)
);

create table Receipt (
Folio int,
int enrollment,
daterec varchar,
totalrec float,
foreign key (enrollment) references Students,
primary key (folio)
);

create table ReceiptDetails (
```

```
cns int,
idconcept int,
Folio int,
subtotal float,
foreign key (idconcept) references Concept
foreign key (folio) references Receipt,
primary key (folio, cns)
);


create table SchoolCalendar(
date varchar primary key,
reason varchar
);
```

Inserting data for some newly constructed tables

The data that are inserted only serve to demonstrate how access privilege functions, and it is left to the user to insert data in other tables to show that access rules are functional for each user.

```
insert into values (1700, 'HSBC');
insert into AccountChecks values (2.9000, 'HSBC');
insert into AccountChecks values (3,60, 'HSBC');
insert into AccountChecks values (4,10, 'HSBC');
insert into AccountChecks values (5.1000, 'HSBC');
insert into AccountChecks values (6200, 'HSBC');

insert into Check values (1,10,200, '2008-02-01');
insert into  Check values (2,10,575.20, '2008-02-01');
insert into Check values (2,20,20, '2008-02-01');
insert into Check values (3,10,600, '2007-02-01');
insert into  Check values (4,10,800, '2007-02-01');
insert into  Check values (5,10,100, '2007-02-01');
insert into  Check values (6,10,300, '2007-02-01');

insert into Tabulator values(10,100);
insert into Tabulator values(20,200);
insert into Tabulator values(30,300);
insert into Tabulator values(40,400);
```

```
insert into Tabulator values(50,500);
insert into Tabulator values(60,600);
insert into Tabulator values(70,700);
insert into Professors values(1,40,'Roberto',
'Masters',15000);
insert into Professors values(2,70,'Carlos',
'Doctorate',25000);
insert into Professors values(3,20,'Luis',
'Undergraduate',6000);
insert into Professors values(4,30,'Yunuan',
'Masters',12000);
insert into Professors values(5,10,'Julio',
'Undergraduate',4500);
insert into Professors values(6,20,'Samuel',
'Undergraduate',5500);

insert into SpecialCourses values
(1,1,1,20070204,20050204);
insert into SpecialCourses values
(2,2,2,20070204,20050204);
insert into SpecialCourses values
(3,3,3,20070204,20050204);
insert into SpecialCourses values
(4,4,4,20070204,20050204);
insert into SpecialCourses values
(5,5,5,20070204,20050204);

insert into ExtracurricularCourses values (1, 'admin',
204);
insert into ExtracurricularCourses values (2, 'design',
204);
insert into ExtracurricularCourses values (3, 'bdd',
204);
insert into ExtracurricularCourses values (4, 'java',
204);

insert into Subjects values(1,'admin bdd',204);
insert into Subjects values(2,'redes',204);
```

```
insert into Subjects values(3,'redes 2',204);
insert into Subjects values(4,'admin bdd',204);
```

IV. Problem solving

In this section we get to work solving the problem that was initially proposed. At this time we have the database created, we have inserted data in some tables and it is time to implement the concepts we have studied the basics section. The issues raised here have been resolved, so must "copy" the SQL command "paste" in psql.

User Management

While solving the problem of administration of UACME, we have identified two groups of users on this system: Administration and School. Within each of these groups are the users, which are classified as follows:

Administration:
Head of department: C. P. Avila
Assistant Directors: Mr. Cancino

School:
Head of department: Mr. Barroso.
School Assistant: Ms. Tirado.
School Assistant: Ms. Martinez.
Assistant School: Mrs. Aquino.
School Assistant: Ms. Ramos.

Creating user groups

We have chosen the names of Admin groups for DA and School for DCE.

```
-- Creating user groups
```

```
create group admin;
create school group;
```

Creating Users of the Management group

The name of the group has been assigned as a password, but this is done for being simple. In practice each user must choose a custom password.

```
-- Creating users administrative group
create user avila with password 'admin' in admin group;
create user cancino with password 'admin' in admin group;
```

Creating Users of the School group

The name of the group is assigned as a password, but this is done for simplicity. In practice each user must choose a custom password.

```
-- Creating users the school group
create user barroso with password 'school'
in the school group;
create user tirado  with password 'school'
in the school group;
create user martinez with password 'school'
in the school group;
create user aquino with password 'school'
in the school group;
create user ramos with password 'school'
in the school group;
```

Granting access privileges on the system tables

To grant access privileges, UACME's board has authorized access to the following tables for each department:

Tables that are allowed access to the Management group

AccountChecks (naccount, balance, bank)
Check (naccount, cns, total, date);

Tabulator (idtab,amounthour);
Professors (idprofe, idtab, name, maximum, salary);
Concept (idconcept, desconcept);
Receipt (folio, registration, daterec, totalrec);
DetailRecepit (folio, cns, idconcept, subtotal);

For special cases this department can gain access to consult Special Courses tables, Summer Special Courses, Extracurricular Special Courses, and the Extracurricular Course List. They are explicitly are not allowed to modify any field or record.

Tables that are accessible by the School Group

Special courses (idcourse, idprofessor, cns, fini, ffin);
ExtracurricularCourses (idextra, decextra, nhourscourse);
Subject (nmat, des, horacurso);
ECSummer(idcourse, nmat);
ECExtracurricular (idcourse, idextra);
Students (tuition, name);
Bimester (tuition, period, nmat, rate, faults);
Absences (registration, date);
SchoolCalendar(date, reason);

Special case of teachers for School group

The way we avoid that the school group can see the salary of the individual teachers is by creating a view and assigning privileges separately.

```
-- When creating the view, note that the salary field
is not projected, therefore it is hidden from view s of
school group users.

CREATE VIEW  ViewProfessorsSchool  AS SELECT idprofe,
idtab, name, maximum FROM Teachers;
```

Granting privileges in the database to the SQL Management group

```
-- All privileges for the tables of the administrative
system
GRANT all ON Check table to group admin;
GRANT all ON AccountChecks table to group admin;
GRANT all ON Tabulator table to group admin;
GRANT all ON concept table to group admin;
GRANT all ON Receipt table to group admin;
GRANT all ON DetailReceipt table to group admin;


-- Only the admin users group can consult and update
the professors table.
GRANT select, update ON update Professors to group
admin;


-- Admin users group are only permitted to consult
these tables.
GRANT select ON ExtracurricularCourses table to group
admin;
GRANT select ON ECSummer table to group admin;
GRANT select ON ECExtracurricular table to group
admin;
GRANT select ON SpecialCourses table to group admin;
```

Granting privileges in the database for School group in SQL

```
-- Granting privileges in the school system tables.
GRANT all ON table classes to school group;
GRANT all ON table ExtracurricularClasses to school group;
GRANT all ON table ECSummer to school group;
GRANT all ON table ECWExtracurricular to school group;
GRANT all ON table SpecialCourses to school group;
GRANT all ON table to Students group;
GRANT all ON table Absences group to school;
```

```
GRANT all ON table Bimester to school group;
GRANT all ON table School Calendar to school group;

-- Granting permissions on the view of teachers
GRANT all ON table ViewProfessorsSchool to school group;
```

Test the privileges assigned to users

To connect to the database with different user other than postgres (see Figure 2) you must search the directory "C:\ Program Files\PostgreSQL\9.3\bin" psql and say which the database you want to connect to (*in our case -d uacme*) and the user (*U-barroso*). Once done PostgreSQL asks the password for the user *barroso* , and in that case that it is correct the shell of the database is displayed. The example is built on the Windows platform. Try connecting different users that you have previously created.

C:\Program Files\PostgreSQL\9.3\bin>psql -d uacme -U barroso
Password for user barroso:
Welcome to psql 9.3.4, the PostgreSQL interactive terminal.
Type: \copyright for distribution terms
\h for help with SQL commands
\? for help with psql commands
\g or terminate with semicolon to execute query
\q to quit
uacme=>

Figure 2. Example of connection to someone different than a postgres user.

● **Connected to the database with the muddy uacme user**
Try the following commands:

```
Select * from Professors;
Select * from ViewProfessorsSchool;
Select * from AccountChecks;
```

```
Select * from Checks;
Insert into Professors values (7, 20, 'Jesus',
'Bachelor', 25000);
Insert into ViewProfessorsSchool values (7, 20, 'Jesus',
'Bachelor', 25000);
```

This requires us to attack the problem from a new perspective, creating rules **using the postgres user account** run the following command:

```
CREATE or REPLACE RULE  insert _professors AS ON insert
TO ViewProfessorsSchool
DO INSTEAD insert into professors values (
new.idprofe,
new.idtab,
new.name,
new.maximum, 0);
```

This problem occurs because you are not allowed to insert registries on views, therefore what we have to do is redirect the operation to the professors table using a rule (which is a kind of interruption) that is triggered every time you try to run a inclusion of data on the table.

With the user account Barroso try running the command again:

```
insert into ViewProfessorsSchool values (7, 20, 'Jesus',
'Bachelor');
```

● **Connected to the BD uacme with avila** user, try the following commands:

```
Select * from Professors;
Select * from ViewProfessorsSchool;
Select * from AccountChecks;
Select * from Check;
```

```
Update Professors set salary = 6000 Where idprofe = 7;
Insert into Professors values (8, 30, 'Salvador',
'Masters', 20000);
Insert into ViewProfessorsSchool values (8, 30,
'Salvador', 'Masters');
```

V. Additional work

The following issues are unresolved, so it is necessary to apply their acquired experience to solve them.

1. Using different users verify that you are allowed to carry out the movements assigned to each of the tables.
2. Build the missing rules for the school group on the view ViewProfessorSchool , build the rule for when the user wants to delete the register of the teacher Luis.
3. Add additional restrictions. Use the following policy: The manager in charge of capturing the special courses will be the administrative department (any user), but whoever assigns the teacher will be the school department. Build the view and the rule will regulate this data insertion.

   - Inserting data into the SpecialCourses and the specialized tables that affects the AD, with the Professor field in zeros or referencing a special register (for example, an invalid professor) from the Professors table.
   - Modification of the SpecialCourses tables to assign the Professor that will be made by the DCE.

4. Finally, explain the reasons for the instructions for users: muddy and Avila, if they make mistakes or function properly.

CULTURAL

BRIEFS

ROSARIO CASTELLANOS
A BRIEF BIOGRAPHY

Silvia E. Álvarez Arana

Universidad Autónoma de Chiapas

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1 Fragmento de la Tesis *La literatura epistolar de Rosario Castellanos Cartas a Ricardo* (2007) UNACH

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Rosario Castellanos Figueroa was born-by a fortuitous situation-in Mexico City on May 25, 1925. Several days later she was moved to the municipality of Comitan in the state of Chiapas, where he lived until 1941-the year that she moved to Mexico City, where she continued her secondary education and remained until the completion of graduate degree.

In 1947 she published her first book: *Notes for a statement of faith*. In 1949 she graduated with a Masters of Philosophy in the Faculty of Arts and Philosophy of the UNAM, where she met Ricardo Guerra Tejada. In that same year she began teaching, which did not stop until her death, just as her literary production.

After completing her graduate studies, Castellanos published her thesis *Sobre cultura femenina* (1950) which outlined the basics of what later developed as *integrationist feminism*. That year she also published *Dos poemas and From the barren vigil*.

In 1950, Rosario became temporarily established in Chiapas and began writing *Cartas a Ricardo*. A year later, she traveled to Spain on a scholarship to study Stylistics at the Complutense University of Madrid. The correspondence began the previous year continued from different European countries during 1951.

By 1952, the writer returned to Mexico and Chiapas as a promoter of cultural events at the Institute of Sciences and Arts (ICACH) in Tuxtla Gutiérrez. It was there where she taught classes and published her poetry anthologies: *El rescate del mundo* and *Presentación en el temple*. In January of 1952 the correspondence between Rosario and Ricardo was interrupted for the first time, as a result of the marriage of Ricardo Guerra with Lilia Carrillo.

In 1955, the anthologies *Misterios gozosos, El resplandor del ser and Lamentación de Dido* were published. A year later she moved to San Cristobal de las Casas and taught at the Law school of the UNACH, alternating her activities with those undertaken in the Tzeltal-Tzotzil Center of the National Indigenous Institute as an editor at the Petul puppet theater. *Balun Canan* was published

in 1957 and she was awarded the *Premio Chiapas* in 1958 for her entire literary work.

From 1952 to 1958 she resided in Chiapas, and during this time there is no evidence of correspondence with Ricardo. However, in early 1958 Rosario returned to Mexico City and married Ricardo Guerra. The same year she published her dramatic poems *Salomé, Judith* and *Al pie de la letra*. In 1960 she joined the UNAM as a professor and Head of Press and Information.

In 1961, Gabriel, her only child, was born. The following year Rosario continued her indigenous work and published the novel *Oficio de Tinieblas*, and a simplified version of the Political Constitution under the title of *Mi libro de lectura* , product of her work in the Tzeltal-Tzotzil Coordinating Center. There is also no evidence of correspondence between Rosario and Ricardo during this period.

 From 1961 until her death, she was a weekly contributor to the editorial page of Excelsior. In 1964 she published *Los convidados de agosto*.

It is in 1966 that correspondence with Ricardo Guerra resumed because Rosario, after a serious marital crisis, accepted the invitation from the Universities of Wisconsin, Indiana and Colorado to be a guest lecturer. She then travelled to the United States where stayed until 1967- the same year that correspondence with her at the time husband ceased permanently.

 Her divorce, return to Mexico and designation as Woman of the Year all happen in 1967. From this moment until 1971 she continued teaching at the UNAM, which was interrupted by her diplomatic appointment that required her to change her residence to Tel Aviv; where he served as ambassador of Mexico in Israel.

Years before her death, she published *Poesía no eres tú* (1972), and *Mujer que sabe latín...* (1973) and continued as a

collaborator for Excelsior. Her death, a well-documented fact occurred unexpectedly in Israel in 1974.

El uso de la palabra, El mar y sus pescaditos and *El eterno femenino* were published posthumously in 1975. It was until 1994 when, following her own instructions according to Juan Antonio Ascencio, *Cartas a Ricardo* Letters was published. Two years later in 1996, her last novel was published, *Rito de Iniciación*.

Although it is true that the letters are a basal reference to the life of Rosario, in them we see how literature plays an important role in her understanding and pursuit of freedom, therefore, although the literariness of a text's is a value that sometimes only depends on what the reader attribute to it or not, it's a fact that language expresses a situation and literary language transforms , just as in this case where the language allows the author to reach a higher plane of consciousness of herself- expressing her moods, making them attainable.

Eagleton says that "Literature forces us in an impressively manner to realize that language refreshes these habitual responses and makes objects more perceptible" (1988: 14). Therefore, through language, Rosario reduces her anxiety analytically and then describes the liberating mechanisms that arise from her through writing to say "*todo esto me parece muy fácil escrito. Pero ya vivido lo es menos*" -"all of this seems very easy written. But once lived, is it less so."(Castellanos, 1994: 201)

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