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# **ECORFAN Journal-Republic of El Salvador**

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## **Presentation of the Content**

In number eleven, is presented an article *Relevance of the Geriatrimss program in the degree of depression in the elderly*, by SARABIA-ALCOCER, Betty, LÓPEZ-GUTIÉRREZ, Tomás, CANUL-RODRIGUEZ, Pedro Gerbacio and AKÉ-CANCHÉ, Baldemar, with adscription at Universidad Autónoma de Campeche, in the next article *A synthetic worldview of inflexive becoming in the face of perinatal mourning*, by RAMOS-JAUBERT, Rocío Isabel, ESPERICUETA-MEDINA, Marta Nieves, ALVARADO-CORTÉS, Julio César and RAMIREZ-CHÁVEZ, Jorge, in the next article *Radio production in Zapotec in San Pablo Güila, Oaxaca, and the regulation of sector in a capitalist environment*, by LÓPEZ-HERNÁNDEZ, Sonia, with adscription in the Universidad del Mar, in the next article, *Design of a strategic model with Neurodidactics in Higher Technological*, by GONZÁLEZ-RAMÍREZ, Claudia Teresa & VEYTIA-BUCHELI, María Guadalupe, with adscription in the Universidad UDAVINCI and Instituto Tecnológico de Zitácuaro.

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**Relevance of the GERIATRIMSS program in the degree of depression in the elderly****Relevancia del programa GERIATRIMSS en el grado de depresión de los adultos mayores**

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**Abstract**

Background: Depression is defined as that affective disorder characterized by feelings of sadness and despair most of the day, lack of energy or constant tiredness; and that these symptoms occur almost every day, for more than two weeks, being one of the most common psychiatric disorders among older adults. Objective: To associate the number of visits to the GERIATRIMSS program with the degree of depression of the elderly assigned to UMF 13 of the IMSS in Campeche. Material and methods: Observational, prospective, cross-sectional and analytical study in the elderly enrolled who attended the GERIATRIMSS program of the UMF 13 of the IMSS in Campeche in the month of December 2020, the Yesavage Geriatric Depression Scale (version reduced). With a sample of 52 research units (based on a prevalence for depression of 5%), with a confidence level of 90% and an accepted variation of +-5%. Results: Spearman's Rho correlation was performed, which was statistically significant at the 0.01 level (bilateral), with a negative correlation of -.598 indicating a moderate inverse relationship. Conclusions: This study shows a significant association between the number of visits to the GERIATRIMSS program and the degree of depression.

**Older adult, Depression, GERIATRIMSS program, Spearman, Yesavage**

**Resumen**

Antecedentes: La depresión es el trastorno afectivo caracterizado por sentimientos de tristeza y desesperación la mayor parte del día, falta de energía o cansancio constante, la gravedad va desde un trastorno leve hasta otro que amenaza la vida, es uno de los trastornos psiquiátricos más habituales entre los adultos mayores. Objetivo: Asociar el número de asistencias al programa GERIATRIMSS con el grado de depresión del adulto mayor adscrito a la UMF 13 del IMSS en Campeche. Material y métodos: Estudio observacional, prospectivo, transversal y analítico en los adultos mayores que acudieron al programa GERIATRIMSS de la UMF 13 del IMSS en Campeche en el mes de diciembre de 2020, se les aplicó la Escala de Depresión Geriátrica de Yesavage (versión reducida). Con una muestra de 52 unidades de investigación (con base en una prevalencia para depresión del 5%), con un nivel de confianza del 90% y una variación aceptada de +-5%. Resultados: Se realizó la correlación Rho de Spearman que fue estadísticamente significativa en el nivel 0,01 (bilateral), con una correlación negativa de -.598 que indica una relación inversa moderada. Conclusiones: Este estudio evidencia una asociación significativa entre el número de asistencias al programa GERIATRIMSS y el grado de depresión.

**Adulto mayor, Depresión, Programa GERIATRIMSS, Spearman, Yesavage**

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<sup>†</sup> Researcher contributing first author.

## Introduction

Currently, a population phenomenon is taking place in the world, both growth and aging, given that the birth rate tends to decrease with respect to deceased people, due to the change in the way of living in today's society (1) (2).

According to the INEGI in the last Population Census of 2010, the country has 112,322,757 inhabitants, of which 9%, that is: 10,109,048 are people over 60 years of age with a high prevalence of chronic degenerative diseases such as diabetes, hypertension, cerebrovascular diseases, heart disease, chronic obstructive pulmonary disease, cancer, and all the complications of each of these pathological entities.

The issue is complicated for the country, but for the IMSS it is worse. The population assigned to family medicine for 2011 is 36,131,172 (DATAMAR) being the population of older adults 5,850,597, which represents 16% of the total population. Taking into account the population projections of the INEGI, the total national population would reach 16% of older adults by the year 2030, for which the population served by the IMSS is aging at a rate of 20 years more than the general population. In other words, the current IMSS population over 60 years of age has acquired a dimension as expected in the year 2030.

In relation to the weight of the disease and the number of services provided by the IMSS to older adults, in 2008, (DATAMAR) two out of every 10 consultations that are granted in family medicine correspond to this age group, in consultation of specialties it is 1 out of 4, in emergency care 1 out of 6, in hospital discharges it is 1 out of 4 and in surgical interventions it is 1 out of 5. These data are overwhelming, given that the population of this age group is now 16% and they are the ones who demand a greater number of medical services.

As can be seen, the economic impact is very high, the elderly population consumes between 20 and 25% of the resources allocated to specialty medical care, expenses and surgical interventions.

Until now, in the health sector and in the IMSS, care programs have been developed for this age group in isolation, which has allowed the accumulation of experience in this regard, however, standardized and cost-effective actions are required to reduce the impact of population aging and its consequences.

Healthy aging, risk control and associated comorbidity must be managed from the first level of care. The development of hospital care programs without the support offered by family and community medicine would lead to financial collapse and failure of the provision of services for the elderly (3) (4) (5).

Considering that old age is a critical period of life, which entails a series of conflictive situations, such as retirement, loss of loved ones, the departure of children, chronic diseases, the proximity of death, among others, and to all this are added other negative events that occur almost inevitably. These critical circumstances will produce negative affective reactions in older adults, such as depression (6) (7).

Depression is considered one of the most complex disorders in the gerontological population, since it can have potentially harmful effects on the health of an elderly person. A series of factors contribute to this, among which somatic diseases stand out, the decrease in cognitive functions and, at the same time, it is usually the most frequent cause of emotional suffering in the last stage of life (8) (9).

It is important to add that the elderly tend not to ask for specialized help in mental health centers. The correct diagnosis of the emotional problems of the depressed elderly becomes, therefore, an issue of extraordinary importance.

Depression can be misdiagnosed in the elderly because doctors attribute its symptoms to physical illness or consider it a normal part of the aging process. The symptoms of depression often overlap with the normal changes associated with aging.

Depression is defined as a mental illness or disorder that is characterized by deep sadness, low mood, low self-esteem, loss of interest in everything and decreased mental functions. Etymologically the word "depression" comes from the Latin "depressio" which means "dejection". And, indeed, the patient feels down, with a discouraging attitude about his existence and his future, which prevents him from living fully (10) (11) (12).

#### DEFINITION OF DEPRESSION ACCORDING TO THE WORLD HEALTH ORGANIZATION (WHO):

Depression is the presence of sadness, loss of interest or pleasure, feelings of guilt or lack of self-esteem, sleep disorders, appetite, feeling tired or lack of concentration that can occur at some point in everyone's life.

#### DEFINITION OF DEPRESSION ACCORDING TO DSM IV (Diagnostic and Statistical Manual of Mental Illnesses):

Depression is defined as that affective disorder characterized by feelings of sadness and despair, most of the day, lack of energy or constant tiredness, and that these symptoms occur almost every day, for more than two weeks, whose severity ranges from a mild disorder to another that threatens life, being one of the most common psychiatric disorders among older adults.

#### *GERIATRIMSS program*

As of May 2010, with the authorization of the H. Technical Council and providing resources for the training of personnel, the GERIATRIMSS Program is being implemented, with which it is intended to institute a true system of geriatric medical care, and which provides for multidisciplinary participation. of the three levels of care.

It is a relatively new program with an appearance in the media on January 11, 2012 in the Excelsior newspaper, it includes activities for its older adults such as: laughter therapy, health education, manual and activity practices physics to mention a few; all of them aimed at the physical, psychological and social changes of age, from a group or personalized way if the older adult requires it, consists of 5 sessions, 1 monthly session and at the end of the 5 sessions they are given a comprehensive reassessment to determine if you should continue to attend the program or if you should be referred to some other service.

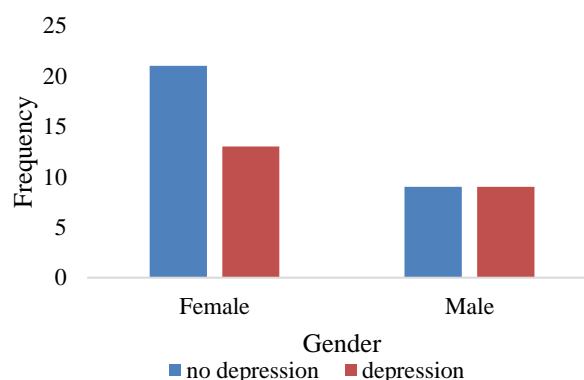
#### Methodology

Observational, prospective, cross-sectional and analytical study in the elderly enrolled who attended the GERIATRIMSS program of UMF 13 of the IMSS in Campeche in the month of December 2018.

The general objective of this work was to associate the number of visits to the GERIATRIMSS program with the degree of depression in the elderly.

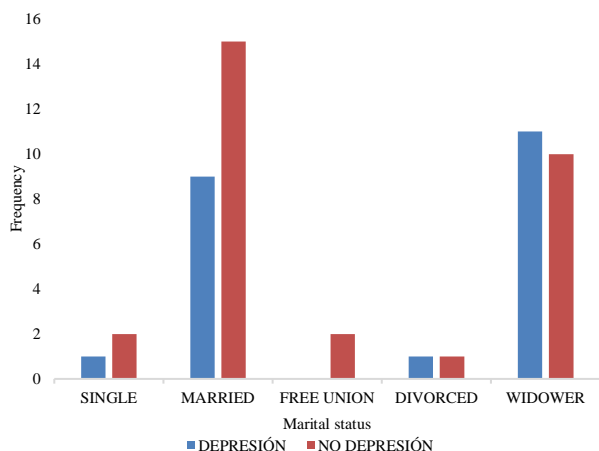
#### Results

A mean was calculated as a measure of central tendency for age, where the mean was 70 years, and the standard deviation was 7.48 years. The comparison between gender and the presence or not of depression was made, in which it was observed that depression was present in 42% of the total, with a predominance of the female gender in both groups (Graphic 1)



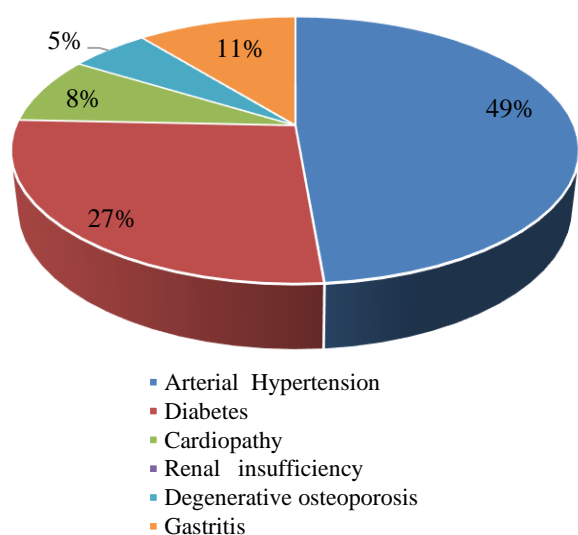
**Graphic 1** Comparison between gender and the presence or not of depression

A comparison was made between marital status and the presence or absence of depression, in which a higher percentage of depression was observed in widowed older adults compared to married older adults (Graphic 2).

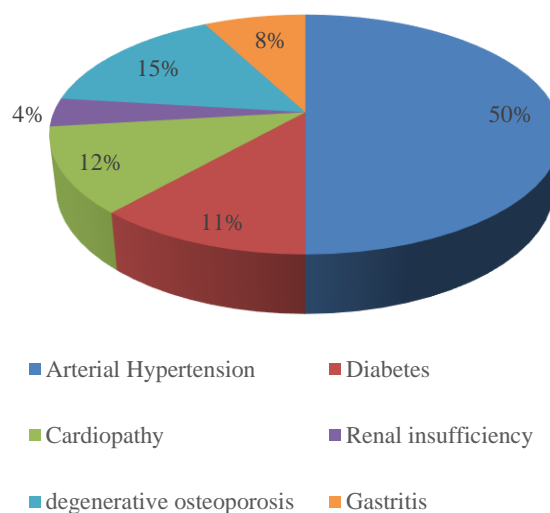


**Graphic 2** Comparison between marital status and presence or absence of depression

A comparison was made between comorbidities and older adults with or without depression, in which a higher percentage of high blood pressure, diabetes, and gastritis was observed in the group of older adults without depression, compared to the group of older adults with depression. which a higher percentage was observed in arterial hypertension, degenerative osteoarthritis and heart disease (Graphics 3 and 4).

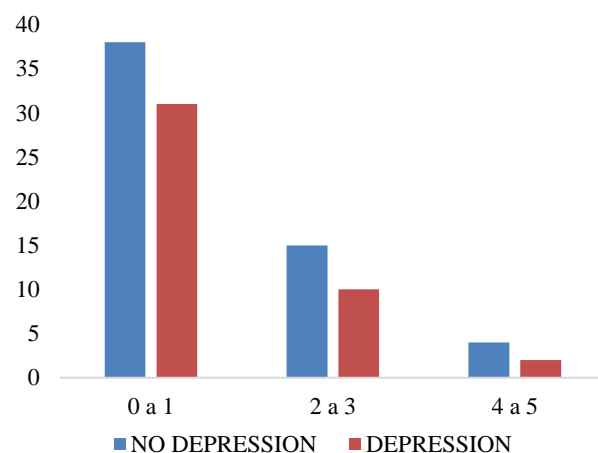


**Graphic 3** Percentage of older adults without depression with comorbidities



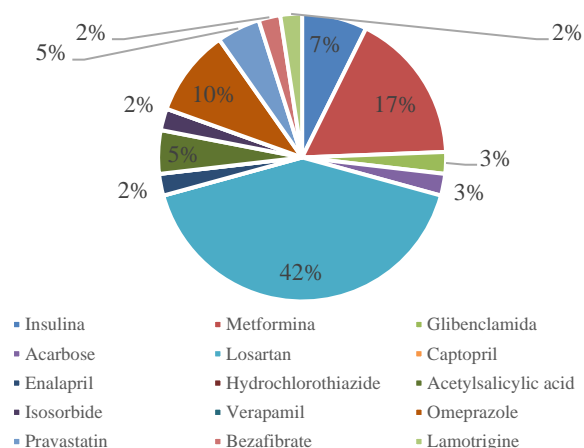
**Graphic 4** Percentage of older adults with depression and comorbidities

A comparison was made between the number of medications cross-sectional, derly and the presence or absence of depression, in which it was observed that the number of medications with the highest percentage was 0-1 medications with a total of 69% in both groups (Graphic 5).

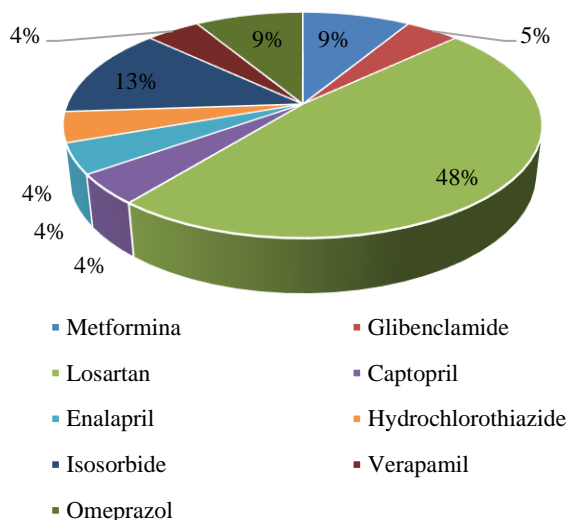


**Graphic 5** Comparison the number of medications in the elderly and the presence or absence of depression

A comparison was made between the most common medications and older adults with or without depression, in which a higher percentage of medications in losartan, metformin and omeprazole was observed in the group of older adults without depression, compared to the group of older adults with depression in which a higher percentage of medications was observed in losartan, isosorbide, omeprazole and metformin (Graphics 6 and 7).



**Graphic 6** Comparison of the most common medications in patients without depression



**Graphic 7** Comparison of the most common medications in patients with depression

A cross table was made of the number of visits to the GERIATRIMSS program with the Degree of Depression, in which it was observed that the highest percentage without depression was found in those who attended 4-5 times (32%), in older adults with mild depression, it was observed that the highest percentage was found in those who attended 0-1 times (29%) and in the older adult with established depression it was observed that they attended 0-1 times (2%). (Table 1).

GERIATRIMSS Program	Attendance	Degree of depression			Total
		No depression	mild depression	established depression	
0-1	Attendance	7	15	1	23
	%	13%	29%	2%	44%
2-3	Attendance	6	6	0	12
	%	12%	12%	0%	24%
4-5	Attendance	17	0	0	17
	%	32%	0%	0%	32%
Total	Attendance	30	21	1	52
	%	58%	40%	2%	100%

**Table 1** Cross table of the number of visits to the GERIATRIMSS program with the Degree of Depression

Spearman's Rho correlation was performed, which was found to be statistically significant at the 0.01 level (bilateral), with a negative correlation of  $-.598$  indicating a moderate inverse relationship. Considering the negative correlation of Spearman from 0 to  $-0.25$  low, from  $-0.26$  to  $-0.5$  medium, from  $-0.6$  to  $-0.75$  moderate and from  $-0.76$  to  $-1$  high (7). (Table 2).

Variables		Number of visits to the GERIATRIMSS program	Degree of depression
Spearman's rho	Number of visits to the GERIATRIMSS program	Correlation coefficient	1.000
		Sig. (bilateral)	.000
		N	52
Degree of Depression		Correlation coefficient	-.598**
		Sig. (bilateral)	.000
		N	52

\*\* The correlation is significant at the 0.01 level (bilateral).  
Source: Database.

**Table 2** Spearman's Rho correlation between the number of visits to the GERIATRIMSS program and the Degree of Depression

**Conclusions**

This study shows a significant association between the number of visits to the GERIATRIMSS program and the degree of depression, which can be interpreted in that if the program is carried out in a standardized way in older adults, it manages to improve the degree of depression.

From the perspective of family medicine, this program turns out to be a useful tool for patients who need to strengthen their knowledge and support networks, however, to demonstrate causality, studies with greater methodological robustness are required.

On the other hand, it will also be necessary to carry out greater follow-up in the family medicine consultation to send a greater number of older adults to this program and that it achieves the improvement of its processes.

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## A synthetic worldview of inflexive becoming in the face of perinatal mourning

### Una cosmovisión sintética del devenir inflexivo ante el duelo perinatal

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#### Abstract

Today, focusing on maternal mourning due to perinatal death, in order to understand a devastating phenomenon for parents and particularly for the mother, due to the loss of a child, is a homeostatic milestone. The objective of the present is to comment on an inflectional arc about the emotional adaptive changes in women and after pregnancy and the frustration of motherhood, which this loss entails. The grieving process must be interpreted through the different phases that characterize it and that can manifest in a linear way or behave as a dynamic process that changes from one phase to another. In these conditions, the approach of the health professional is important and must be based on a concatenation of empathy with the mother in the process of mourning, which contains ethical, philosophical and sociological connotations, which must be taken into account in all health management. For mothers in this situation, it is useful to have self-help or support groups, in order to highlight this sad experience and, at the same time, be allowed to interact and be supported by other mothers who have witnessed such an unfortunate experience.

#### Resumen

En la actualidad, centrarse en el duelo materno por muerte perinatal, para comprender un fenómeno devastador para los padres y en particular para la madre, por la pérdida de un hijo, es un hito homeostático. El objetivo del presente es comentar un arco de inflexión sobre los cambios emocionales adaptativos en la mujer y después del embarazo y la frustración de la maternidad, que esta pérdida conlleva. El proceso de duelo debe ser interpretado a través de las diferentes fases que lo caracterizan y que pueden manifestarse de forma lineal o comportarse como un proceso dinámico que cambia de una fase a otra. En estas condiciones, el abordaje del profesional de la salud es importante y debe basarse en una concatenación de empatía con la madre en proceso de duelo, que contiene connotaciones éticas, filosóficas y sociológicas, que deben ser tenidas en cuenta en toda gestión sanitaria. Para las madres que se encuentran en esta situación, es útil contar con grupos de autoayuda o apoyo, con el fin de resaltar esta triste experiencia y, al mismo tiempo, poder interactuar y ser apoyadas por otras madres que han sido testigos de tan desafortunada experiencia.

**Mourning process, Perinatal mourning, Cosmovision**

**Proceso de duelo, Duelo perinatal, Cosmovisión**

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## Introduction

The 2030 agenda defines among its objectives of sustainable development, the third objective that indicates how health and well-being require guaranteeing a healthy life, promoting well-being at all ages. Currently five million children die each year, four out of every 5 child deaths occur in Africa; the children of mothers who receive education are more likely to survive than those children of mothers without education, also today 17,000 fewer children die every day than in 1990; And by receiving the measles vaccine, almost 15.6 million children have been prevented from dying since the year 2000.

Today, focusing on maternal mourning due to perinatal death, to understand a devastating phenomenon for parents and particularly for the mother, due to the loss of a child, is a homeostatic milestone. The objective of the present is to comment on an inflectional arc about the emotional adaptive changes in women and after pregnancy and the frustration of motherhood, which this loss entails. The grieving process must be interpreted through the different phases that characterize it and that can manifest in a linear way or behave as a dynamic process that changes from one phase to another. In these conditions, the approach of the health professional is important and must be based on a concatenation of empathy with the mother in the process of mourning, which contains ethical, philosophical, and sociological connotations, which must be considered in all health management. For mothers in this situation, it is useful to have self-help or support groups, to highlight this sad experience and, at the same time, be allowed to interact and be supported by other mothers who have witnessed such an unfortunate experience.

## An integrative look at the perinatal mourning phenomenon

To begin, it is important to answer as a rhetorical premise, what is a worldview? It is answered with support from Herrero (2002, cited in Illicachi, 2014), in the form or belief of a person who has about reality or a cultural representation to perceive, interpret and explain the world. Each world creates it as it sees fit, and the inclusive imaginary of the perinatal mourning phenomenon is extremely extensive.

According to the World Health Organization (WHO), the perinatal period extends from 22 weeks of gestation to the first week of life of the newborn (World Health Organization [WHO], 2006). However, in praxis and in the specialized literature it is conceptualized in broader terms, with variability between countries and scientific organizations.

The concept of perinatal mortality was established by Von Pfaundler in 1936 (cited in Valdez, et al., 2009) and is considered as death of conception occurring between the twentieth week of gestation and the twenty-eighth day after birth, this is It is divided into two periods: the first includes intermediate fetal death (20-28 weeks of gestation) and late fetal death (more than 28 weeks of gestation).

Some clinical manifestations of the phenomenon particularize somatic or endogenous events that can be elucidated as the most frequent symptoms, of which the following are detailed (Moscarello, 1989):

Physical appearance, through empty stomach, tightness, shortness of breath, weakness, fatigue. Emotional environment, recurrent in shock, emptiness, rage, frustration, author reproach, guilt, disbelief, confusion, depersonalization.

Considering the worldview as a structure that unfolds, the conventional or specific characteristics of perinatal mourning, which are far from other types of mourning, can be represented as a multiple mourning, because despite the conscious loss of the baby, it represents or opens multiple losses for the parents, the literature externalizes them in the following way; the projected child is mentioned, this supposes Brier (2008, p. 455), as the "loss of a more symbolic than real relationship, built by the imagination of the one who is in mourning and based on their needs and desires".

On the other hand, Côte-Arsenault and Denney-Koelsch (2011), explained the fullness of the couple, symbolized by the expectation and arrival of a child- illusionism, of a stage of life marked by the moment of becoming parents or the family composition imagined, expected or idealized within a family project, due to the real absence of a child who has not been known, has been known as lifeless or has died early; so much so that they lose, an entire expected future on the occasion of the birth of that baby, articulating some aspect of themselves on the occasion of that pregnancy and of having that child. In similar situations, the possibility of transcendence can also be compromised. It may be that due to their circumstances (the mother's age, fertility techniques used, sequelae, etc.), the parents have the feeling of losing their last chance for motherhood/fatherhood, which at the same time generates mourning for infertility or infertility (López, 2011; Pastor Montero, 2011). In relation to individual and family vicissitudes, regardless of their condition as typology, structure, or life cycle that the family is internalized in view of the above, the birth of a child represents a stellar moment in the life of the family. From pregnancy to childbirth, parents develop feelings of hope, enthusiasm, and joy, projected into the future and neither of them imagines that there will be a happy ending (Ruíz and Robles, 2009). For women, the fact of conceiving a child continues a dense process or plexus, begins before conception, and causes emotional and physical changes in her.

Outlining a level of the claim of the central theme of the succinct, it is important to point out that during pregnancy the mother perceives the fetus as part of herself (symbiosis) and not as a separate subject. This fusion experience of a narcissistic or egotistical nature is the fundamental substrate on which the bond of maternal attachment to her child is based, since the mother deposits part of her self-esteem in it (Solís, 2002), so that the pregnancy fills the most relevant narcissistic ambitions pointed out by Freud, among which are the feeling of omnipotence derived from the fact of giving life to a new being, the affirmation of femininity and the illusion of immortality by contributing to the perpetuation of the next generations of beings. humans, through a son (Winnicott, 1975). The maternal imaginary sign is deconstructed.

While the biological symbiosis that the mother experiences with the fetus, confirms her own value, hence, in the face of the perinatal loss of the unborn child, the emotional response that the mother experiences is like a bodily emptiness, with a feeling of inadequacy, helplessness and loss of self-esteem; feelings that derive from the loss of a part of oneself that has been damaged (Kübler-Ross, 2006).

Given the above, conditions arise that surround the axiomatic approach of Kübler-Ross (2006), due to the discussion of the outcome in determining the fact or factum, it is not uncommon for perinatal loss to cause the appearance of somatic symptoms, altered behaviour, feelings of guilt, and with them comes maternal mourning, which implies a dynamic process that can incur episodes of crisis within any family system, in which the different phases that characterize it overlap each other and is closely concatenated with care mothers from the health team that treated her at her critical moment; the health personnel enlists an imminent role due to the matter of mediating and intervening in a systemic or systematic way in this summary, establishing a relationship with the pertinent models of social - behavioural intervention.

On the other hand, grief is a normal psychological response (thought and feeling) that occurs due to the loss of a loved one and leads to somatic, psychological, and behavioural symptoms. It is a "complex" reaction, constant, identifiable and involves a process of predictable course, in which the emotional ties he had with the deceased person gradually fade (Posada, 2005).

From the conception in the mother, the idea of the finitude of the human being arises, for which it raises existential questions up to that moment; Giving life entails a generational change and confronts the idea of death itself, which is frightening and distressing (Oviedo Soto et al., 2009).

So far, it is possible to interrelate in this area, a phenomenon that is decisive that attributes to the emotional heuristic, the family system conflicts with the types of crises that are generated in an intransigent way, the crisis for normative or inter-systemic predominates, according to Kornblit (1984), which makes explicit components, of which the first is broken down as family exponents – illnesses or accidents, which it implicitly idealizes, for which they imply abortions, sterility or infertility, complications of pregnancy, childbirth or puerperium, transmission diseases (STD), trauma and injuries, loss of bodily functions, amputations, hospitalization, disability or death of any family member, drug addiction, suicide, economic, labour, legal, etc., these characteristics per se instrumental or effective, not they appear isolated, if not they frequently interact and enhance each other.

The home becomes a wide and open space, with the continuous presence of family members due to the arrival of a new member and the invasion of intimate spaces, giving rise to a certain stability in the couple, which needs time to adapt to this situation. This scenario occurs when the pregnancy comes to a successful term and the newborn is alive and without complications, but it does not occur when the child is stillborn or dies at birth; In this case, the mother not only confronts the mourning for the loss of the child, but also the frustration of her motherhood (Worden, 2002).

Maternal grief is a nominal conception, Defey (1985) and Ewton (1993, quoted from Oviedo et al., 2009) report that the mother in the perinatal death of her child can create a more severe and intense response than when an adult; considered that the most significant points in this process with the increase in the feeling of unreality, because their relationship with the person who dies is not based on experiences or memories of a real person, but on the ties that develop before make physical contact with her. The relationship, in this case, is based on the hopes and fantasies of the parents towards a son frustrated by death, and the notable decrease in maternal self-esteem, as a consequence of the woman's perceived inability to trust her body and the supposed satisfactory achievement of the birth of a healthy and alive child; in particular when the loss of this is due to fetal endogenous abnormalities or genetic problems (Valenzuela et al., 2017).

For this reason, it is convenient that prior to the birth of a stillborn child or if it dies at birth, health personnel offer parents their help, helping them to face the death of their child (Entralgo, 1964), always respecting the decision to receive or no psychological or spiritual help is offered to them, since the autonomy of the mother as well as that of the father is a guiding bioethical principle that health personnel must respect (Uribe, 2006).

The health or support personnel faced with this phenomenon of perinatal death linked to maternal mourning, must listen carefully to the parents without making judgments about the initial reactions of mourning; if the death can be foreseen, it must offer the parents the opportunity to be with the child, to hug him, to talk to him, and if they express it, give him a name and baptize him before he dies, according to “religious” rituals or beliefs (Entralgo, 1964).

In short, various authors such as Claramunt (2009), take possession of family pain, sense of guilt, the sign of invalidation, etc., Neimeyer (2000) with the pathology reached by grief, Linares (2012) emphasizes emotional climate and its restrictions, and puts the rituals and beliefs of family lineage first, Kersting and Wagner (2012) internalized the phenomenon child envy, which translated into Spanish: child envy, makes it difficult to contact friends or relatives who have children or who are in the same gestation period in which your loss occurred; as well as the work of Alvarado, Ramos, Ramírez & Muñoz (2021), where they discussed the importance of symbolic interactionism concurrent to the introspective sign lacking perinatal mourning binomial parents in health personnel; Regarding the above, the responses of grief occupy a painful period of affliction that is a normal and necessary response to the loss of a loved one; instead, the absence of the affliction period can be an alarm sign of a pathological situation, including hopelessness or acquired helplessness syndrome (Seligman, 1975, cited in Yela & Malmierca, 1992).

### **Anchoring or helping to discipline**

It is based on a theoretical or referential framework that makes perinatal mourning be considered a non-pathological process, but it leads to intense suffocation-suffering or sorrow for the parents and that represents a clear collateral correspondence of vital and family crisis.

Various models of social or psychosocial intervention were considered, under the tutelage of social constructionism (Bergen & Luckmann, 1966, cited in Gergen, 1996), social constructivism (Pallincsar, 1998), including Blumer's theory or paradigm of symbolic interactionism (1938, 1982); in conjunction with some models of health psychology, highlighting the social cognitive or cognitive social theory of Bandura (2001, cited in Tejada Zavaleta, 2005) "human agency is the ability to exercise control over our functioning and over the events that they affect our life", environment data and cognitions about reciprocal behaviours "self-efficacy" in abilities that exert desired changes, in itself, binary self-regulation to file all kinds of adverse situation, I learn-socialize and act; the theory of reasoned or planned action of Ajzen & Fishbein (1975, cited in Stefani, 1993), exhorts that the best way to predict behaviour is to know its intentions, as well as the perception coming from social pressure, this is associated with the "envy of the child" factor, then the mother, not reasoning about her condition, immediately wishes to become pregnant, without having emotionally felt the loss, and the so-called trans theoretical model of behavioural change, by James O. Prochaska in 1979 (cited in Cabrera, 2000), suggests the design of transition or modification strategies that are according to the characteristics of the people to whom they are directed, evaluates the stage or stage in which the person is in terms of his "intention of change", concatenates with a good grieving process, and the outcome that is optimal, not only in accepting, the loss, if not going further, that of assimilating.

### **Methodology to develop**

It is bibliographic research, with a qualitative approach, the variables are anchored in worldview, grieving process and perinatal grief.

### **Results**

Social constructionism bases its ideas on common sense and social interactions and realities, its understanding of action in the face of a determining factor situation that seeks reinforcement and meaning from it; social constructivism creates an individual sense of their knowledge of their social context, being more appropriate to a psychological construction and deconstruction; Symbolic interactionism argues that the meaning that things hold for the human being constitutes a central element in itself, ignoring it according to which people act is similar to simulating the behavior submitted for the benefit of the factors that supposedly motivate behavior in relation to behavioral training. They are established in structural and scientific ideas in awareness, sensitization to the optimal solution of psychosocial problems over time.

Based on the manuscript, the models that can be adapted mediately and identify or guide a convincing interposition in the face of such an overwhelming situation, the crisis model or crisis intervention channeling the ego support method, described by Duque (2013) is mentioned, whose purpose is to help eliminate symptoms of emotional-attitudinal idiosyncrasy, and recover the balance prior to the crisis (homeostasis with a situational-occupational perspective, activation of their own resources), where the life cycle situation is activated by a tension (loss) with unexpected or usual emotional reactions (grieving process); On the other hand, Viscarret (2007) stated that the purposes of the intervention are to cushion the stressful event – trauma through an immediate – mediate and emergency first emotional environmental aid.

The Gestalt model of Reynoso and Calvo (cited by Duque, 2013) combines the socio-therapeutic or socio-therapy task, with principles that can contribute and of which the following can be mentioned: thought-feeling-action integration; homeostasis or self-regulation, at the end of the day is a psychosocial learning process that directs the person and the dynamic relationship with their environment.

You can also consider the model of networks and systems supported; life cycle crisis network method (Garbarino and Walton, cited in Payne, 1995), supports the strengthening and constitution (if they do not exist) of support systems that work in a network through natural and/or formal groups (self-help groups, reflective, educational-psychoeducational, etc.) for mutual help, combines personalized intervention, (systems) and collective - social; it can emphasize essential networks in the face of the process or a powerful emotional dilemma in the face of the phenomenon that has arisen.

In summary, models of the so-called "social intervention", which precedes the classical schools of psychology, specifically the branch of social psychology, and which would significantly contribute, it is pointed out, the human validation model of Virginia Satir proposed in the year 2002; Walton and Garbarino's Networks and Support Systems in 1983; the life model of Germani and Gitterman of 1980, and the change model of Bernier and Johnsson published in 1997, (cited in Duque, 2013).

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### **Conclusions**

Despite a blurred panorama before the subjective - subjective perinatal mourning, the literature shakes or infers that the central nucleus of its worldview - integrative, relatively are the emotions and hope of conceiving a child together with the arrival in this world, however the loss unexpected can not be ignored in any type of thought or desire, rather, the inflectional point helps to reconfigure cognitive structures to prevent, modify care habits during pregnancy, establish couple agreements in bifurcation "medical - social environment", since that any transition for or against is imminent, especially a long-term obstetric or obstetric preconception.

The models of the theories described must be distinguished, social constructionism versus social constructivism, symbolic interactionism and its articulation with Gestalt theory, crisis intervention model and its typification, etc., not to influence an old model (almost unreal or utopian) to a latent model, since most are directly related to so-called social theory. Do not overlook the models or theories of the area of health psychology, on the contrary, weave the clinical process as reinforcement; It is not omitted to mention the undermining of the construct "social healing", which is rather an ideology that seeks to integrate from the irrational point of view.

Currently the models are overlapping, but with inertia, in accordance, it is becoming an imminent and overwhelming reality in the face of the exposed phenomenon. As the information is re-established, deconstructs the approach of the health or support personnel, better empathy, ethical and quality results will be shown in the management of the perinatal mourning process. Likewise, with a progressive and articulated vision, under a dynamic of emotional-affective-spiritual intuition in a systematic order, it ensures the applicability of the elucidated intervention models, it is not only the intention, but also the action, reiterating Neymer's constructivist perspective (2000). It continues to ponder the emotional climate through the resources of deity in rituals or implicit beliefs, which for parents and family is extremely valid.

### **Proposals**

Continue reviewing, exploring the phenomenon-perinatal mourning- concatenating - perinatal death, aim to reconsider the mourning process, in this area.

Develop from scientific research a methodological theoretical framework to understand the impact of perinatal grief and integrative concomitants.

Design qualitative and quantitative instruments that measure variables that make up the transition of mourning and perinatal death from what is the mourning process.

The measurement of the concept of perinatal mourning - mourning process and perinatal death should consider the term "assimilation" as an important conclusive connector.

Build a predictive family model starting from the transition and transaction of perinatal mourning, for its characterization and comprehensive understanding.

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## Radio production in Zapotec in San Pablo Güila, Oaxaca, and the regulation of sector in a capitalist environment

### Producción radiofónica en zapoteco en San Pablo Güila, Oaxaca, y la regulación del sector en un entorno capitalista

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#### Abstract

In Mexico, the socialization of messages from communities and ethnic groups through broadcasting is complex (Calleja & Solís, 2005) (Esteinou Madrid & Alva de la Selva, 2011) and is adapted to the capitalist context. This is due to regulatory policies of the telecommunications sector oriented towards capitalist development that favors media concentration (of capital and structure) (Alva de la Selva, 2015) (Becerra & Mastrini, 2010), and limits the plurality and diversity of actors and content.

The objective of this communication is a descriptive review, focused on the production of programming in their mother tongue (Zapotec) in the face of public government intervention, of the operation of the station 102.7 Fm Radio Comunitaria De San Pablo Güilá, Agency of the Santiago Matatlán municipality, a indigenous community of Oaxaca.

It is a qualitative case study based on critical political economy, production itself is considered the dependent variable, which is influenced (independent variable) by a variety of factors (internal and external); in the particular case, the regulatory and economic framework is explored. The topic, in itself, is a contribution because the empirical information is scarce or null.

We worked with the collection and review of primary data (direct observation and interviews) and secondary data (bibliohemerographic).

**Community broadcasting, concentration of media ownership, media control**

#### Resumen

En México la socialización de mensajes de las comunidades y grupos étnicos mediante la radiodifusión es compleja (Calleja & Solís, 2005) (Esteinou Madrid & Alva de la Selva, 2011) y se adapta al contexto capitalista. Esto debido a políticas regulatorias del sector de telecomunicaciones orientadas al desarrollo capitalista que favorece la concentración mediática (de capital y estructura) (Alva de la Selva, 2015) (Becerra & Mastrini, 2010), y limita la pluralidad y la diversidad de actores y contenidos.

El objetivo de esta comunicación es una revisión descriptiva, centrada en la producción de programaciones en su lengua materna (zapotec) ante la intervención pública gubernamental, del funcionamiento de la estación 102.7 Fm Radio Comunitaria De San Pablo Güilá, Agencia del municipio Santiago Matatlán, una comunidad indígena de Oaxaca.

Es un estudio cualitativo de caso basado en la economía política crítica, la producción en sí se considera la variable dependiente, que está influida (variable independiente) por una variedad de factores (internos y externos); en el caso particular se explora el marco regulatorio y económico. El tema, en sí, es un aporte porque la información empírica es escasa o nula.

Se trabajó con recopilación y revisión de datos primarios (observación directa y entrevistas) y secundarios, (bibliohemerográficos).

**Radiodifusión comunitaria, pluralismo de los medios de comunicación, política de la comunicación**

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## Introduction

Broadcasters are a type of information enterprises. They are open systems, economic and social organisations that create products/services aimed at satisfying information and entertainment needs in society with a primarily profit-making objective "that arise because they are able to satisfy the needs of the market in a more efficient way than if they did not exist" (Caro, 2007, p. 2).

They are also companies that have, among their purposes, the inalienable right to freedom of expression (Aguado, Galán, Fernández-Baumont, & García, 2008).

The analysis of the relationship between mass communications, such as the radio company, and social life should consider that modes of communication and cultural expression are determined by the structure of social relations (Murdock & Golding, 1982). However, a capitalist basis of the "culture industry" does not necessarily result in the production of cultural forms akin to the dominant ideology. That is to say, such a relationship (media-economic structure) is not simplistic to claim that an economic system corresponds to certain cultural products.

This idea is framed within the critical political economy, which is based on the interaction between economic organisation and political, social and cultural life (Lozano, 2007). In this sense, it is understood "how economic relations structure both the general strategies of cultural entrepreneurs and the concrete activities of the people who actually make the products that the "culture industry" sells: writers, journalists, actors and musicians" (Murdock & Golding, 2007). (Murdock & Golding, 1982, p. 29).

Telecommunications and ICTs in Mexico, including radio broadcasters, are understood within "the framework of the very reconfigurations of the capitalist economic order over more than one hundred and fifty years" (Alva de la Selva, 2015, p. 54) that links the country's own history and the way in which knowledge is produced, circulated and accumulated.

Mexico has adopted a neoliberal economic model since the 1980s. Thus, the state withdrew as the central figure in national productive activity, and opened up new spaces in the telecommunications sector. Then, the Decree Reforming, Adding and Repealing Various Provisions of the Federal Telecommunications Law and the Federal Radio and Television Law, of 11 April 2006, is a change of two federal laws in favour of the "most powerful broadcasters", commonly known as the Televisa law. And it is the "most finished expression of the neoliberal project" (Alva de la Selva, 2015), while at the same time it constitutes for community radio stations their recognition within a legal framework through the figure of a concession for social use in which community (non-profit) and indigenous (defined by their cultural identity) radio stations are framed (Neubauer Neubauer, 2016).

This scenario of the regulatory policies of the telecommunications sector in Mexico, oriented towards neoliberal development, would seem to make way for plurality and diversity of actors and content. Thus, although the socialisation of messages through radio broadcasting in communities and ethnic groups continues to be subordinated and limited by the capitalist base, it opens spaces for programming in languages other than Spanish, such as Zapotec, which allows for the creation and transmission of symbolic content that is different from the predominant one.

The following text is a first approach to how the neoliberal economic system in Mexico subordinates to itself, although not as the only instance, the cultural production of community radio stations, without this meaning that it determines cultural and symbolic products ad hoc to the economic system.

In order to achieve this objective, the regulatory policies in the Mexican context, the importance of the radio project and the empirical case of the station 102.7 FM are presented, Radio Comunitaria De San Pablo Güilá, Agencia del municipio Santiago Matatlán, an indigenous community in Oaxaca. This topic and approach is significant due to the scarcity of information on this type of radio (their way of working and products) in regions where this medium is predominant (due to geography) and where the population has a different language to the predominant one, Spanish in Mexico (Girard, 2003) (Nieto, 2018).

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*Regulatory policies*

The radio spectrum is a natural and finite resource, from an economic point of view, explains García Leiva (2013), taking up the International Telecommunication Union (ITU), it is a scarce good of exclusive use, intangible and renewable, but not accumulable or storable, therefore it is not exportable but it can be traded. Radio companies are part of the broad concept of business and therefore require basic knowledge of business economics (Caro, 2007, p. 2), the issues of resources and profit and loss play a key role in the structuring of both processes and products in the media. "It is clear that economics is not the only factor at play, but it cannot be ignored either" (Murdock & Golding, p. 2). (Murdock & Golding, 1982, p. 30).

From an economic point of view, it can be said that there are several classifications of the component segments of telecommunications and Information and Communication Technologies (ICTs). One of the most comprehensive is the International Standard Industrial Classification (ISIC), a system adopted by the International Telecommunication Union (ITU) and the Organisation for Economic Co-operation and Development (OECD), which distributes companies and industries globally according to their activities.

ITU is the public-private partnership based on the principle of international cooperation that allocates radio spectrum and satellite orbits on a global scale, develops technical standards that ensure the seamless interconnection of networks and technologies, and improves access to ICTs for underserved communities around the world (ITU, About the International Telecommunication Union, 2019). In short, it is responsible for standardising, regulating and developing telecommunications worldwide.

It is worth noting that the ITU system places in a separate sector, <<Content and Media>>, the activities and industries engaged in <<the production, publishing and/or distribution of content (information, cultural and entertainment products), where 'content' is understood as an organised message addressed to human beings>> (Alva de la Selva, 2015, pp. 42-43).

The activities related to the operation and coordination of international communications are in the ITU Radiocommunication Sector, which has World and Regional Radiocommunication Conferences to fulfil its purpose in this area, from which the Radio Regulations (ITU, 2016) currently in force emerge. However, in the exercise of the sovereignty of each nation state, the use of the spectrum is managed at the national level in accordance with the international planning framework that establishes which services can use each of the bands.

Since the 1980s, the liberalisation and deregulation of communications has prevailed in response to technological, economic and political changes (Castells, 2012). This paradigm involves "criteria more related to technical efficiency and economic profitability than to the satisfaction of the general interest". (García Leiva, 2013, p. 111).

In other words, the context of technological innovations that enable digitisation and the freeing up of space has an economic consequence of supply, as demand increases for growing portions of spectrum to develop new wireless services such as mobile communication systems or broadband wireless access systems; and the ITU considers a management focused on the value and demand for use that the market grants to each frequency band with minimal regulation and greater freedom of competition (García Leiva, 2013).

However, the management of this "new" resource depends on the characteristics of the resource in each area and existing local services, i.e. it is not possible to quantify its value with certainty a priori. Moreover, this liberalisation of space could also be translated into management oriented towards social and cultural projects.

In broadcasting in Mexico, and the rest of Latin America, the North American commercial model prevailed, which shaped an oligopolistic, commercial and centralised system in large urban centres (Mastrini, Bizbergue, & De Charras, 2013). Then, in the 1980s, Mexico was regulated by policies aimed at trade liberalisation, the liberalisation of foreign investment and the withdrawal of the managing state (orienting, regulating and promoting economic growth), explains Calva, quoted in Alva de la Selva (2015), in coherence with the Latin American region (Rozas Balbotín, 2005).

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The communications sector was seen as key to Mexico's growth and "take-off" and the legal framework based on competition is the Telecommunications Law, enacted on 7 June 1995, and the Federal Telecommunications Commission (COFETEL), created in 1996. However, during the Salinas de Gortari administration (1988-1994), facilities and concessions were given to Televisa and Telmex (Alva de la Selva, 2015).

The Decree Reforming, Adding and Repealing Various Provisions of the Federal Telecommunications Law and the Federal Radio and Television Law, of 11 April 2006, is the opposite of the citizens' proposal that had been worked on for a year and a half (Esteinou Madrid & Alva de la Selva, 2011) and is consolidated into two federal laws that privilege the "most powerful broadcasters" (Alva de la Selva, 2015), which is why it was called the Televisa Law (Ley Televisa).

This new legal framework, independent of the legislative and social process, is a frontier in broadcasting for its transition to digital scenarios.

"Articles 28 and 28A were the nodal point of this reform, as they guaranteed the exploitation of the spectrum for companies for a practically indefinite period of time and without any financial compensation to the state .... It left open the possibility for the consortia to award themselves the radio spectrum slots that were temporarily provided to them for the purposes of a first stage of operation of their digital channels" (Alva de la Selva, 2015, p. 129).

Regarding community radio broadcasters (non-profit), this new regulation hindered their development, for example, the Federal Telecommunications Institute can request (in its opinion) additional requirements to those listed; likewise, there are limitations to carry out activities through which they obtain income for their maintenance and transition to the digital stage. Regarding the first item, "it is mentioned that they will only be able to access up to 1% of the social communication expenditure of federal agencies, through the dissemination of official advertising. In addition to not making the granting of this resource compulsory, this percentage is discriminatory with respect to other types of concessions". (Pineda Partida, 2018, p. 150).

In May 2007, several articles of these reforms were annulled in the Supreme Court of Justice of the Nation (SCJN), but "the transfer of dominance of television consortiums to the field of telecommunications and ICTs" (Alva de la Selva, 2015) was still maintained (Alva de la Selva, 2015).

The reality is that it came to the point of establishing the ascending auction as the sole selection criterion for obtaining a broadcasting concession, that is, offering the radio spectrum to the highest economic bidder. In other words, the concessions for radio and television stations are awarded only to those who have the most money. Consequently, it is money that decides what is broadcast and not the guidelines of the social communication project (Esteinou Madrid & Alva de la Selva, 2011).

The interest in market dominance considers community radio stations as unfair competition, especially in the area of advertising, even though community radio stations did not meet the same communication needs as commercial radio stations and were located in places where the population is at the lowest levels of poverty and where they served vulnerable populations (Calleja & Solís, 2005).

This process, briefly outlined with emphasis on broadcasting, not only responds to complex changes such as technological change (digitalisation) and political-economic demands external to the country. Rather, these facts recognise the actions of "very powerful" economic groups (Esteinou Madrid & Alva de la Selva, 2011), the alliance so that through the condescension of the media the government would have the obedience and loyalty of yesteryear (Lay Arellano, 2013) and business groups are observed to "increasingly influence policies for the sector, or even intervene in the construction of the legal bases necessary to make effective the process of reproduction and economic accumulation of capital in the nascent digital scenarios" (Alva de la Selva, 2015, p. 127). 127).

The result is that in Mexico television is 94% controlled by two business groups and radio is 47.8% owned by four concessionary chains; "the private media are the cultural tools of the free market in which information is transformed into a commodity inserted in the reproduction of capital, governed by competitiveness and profit" (Pineda Partida, 2018). (Pineda Partida, 2018, p. 146).

In this sense, states Murdock and Golding (1982), taking up Marx, those who own the means of production also control the distribution of economic resources and the uses of the resulting surpluses. It seems, the author explains, that those who own the means of production continue to have a high degree of control over the key processes of production and distribution.

The monopoly of mass information in alliance with some sectors of the current political class continues to struggle stealthily in the country to achieve, by whatever means, the operation of electronic communication as an unchecked commercial business and not as a public service of social interest. The aim is to concentrate the structure of mass broadcasting and the new telephone and television networks on an oligopolistic scale; to increasingly privatise the radio-electric spectrum and disregard its nature as a public asset belonging to the nation; to prevent open competition with new players in the telecommunications sector; to hinder the emergence of new audiovisual channels that would mean other alternatives for business action; to pressure to the point of replacing the functions of the nation-state and the constitutional powers of the Republic? In short, to maintain during the 21st century the reproduction of the old unequal order of collective communication that existed in the 20th century at any cost. (García Bermejo, 2010)

In 2013, the Constitutional Reform Initiative on Telecommunications and Broadcasting came into force, which meets the parameters and recommendations of the OECD for the country and, according to Ramírez Ramírez, quoted in Alva de la Selva (2015), could benefit the public media since "they will have other financing options so that they can invest and be technologically, at least, close to the commercial media" (p. 142).

This scenario places us in a capitalist economy, where a corporation's chances of survival and growth ultimately depend on its ability to maintain and increase its profits. But, "by focusing on the economic base, we indicate that control of material resources and their shifting distribution are ultimately the most powerful of the many levers at work in cultural production. But it is clear that this control is not always exercised directly, nor does the economic status of media organisations always have an immediate impact on their production" (Murdock & Golding, 1982).

This means that the media must be seen as part of large corporations and to that extent act on the values and beliefs they represent, but it does not mean that they are passive couriers and promoters of a free enterprise philosophy espoused by the corporations that own them, but it does lessen the likelihood of widespread opposition to such philosophies. (Murdock & Golding, 1982).

With the above, it is possible to observe the late legal recognition in Mexico of broadcasting for social use, when the phenomenon of using radio for social purposes dates back to the 1940's. Moreover, the market and its rules are considered as determinants of broadcasting activity, the priority, rather than public service, is to broadcast what sells, to win audiences not for social legitimacy, but for the fight for ratings in order to sell more airtime and at better prices. "The market imposes itself as the main or only regulator of broadcasting (...) it omits social responsibility and therefore the possibility of social participation in the media" (Calleja & Solís, 2005). (Calleja & Solís, 2005, p. 22).

However, community radio stations work from a local context and attend to their needs, culture and cosmopolitanism. In particular, these radio stations "fulfil a social function for the benefit of a community, which participates from their installation to the construction of the content of the programmes. Most radio stations are self-managed by the communities where they operate and their legitimacy is based on the exercise of their autonomy" (Pineda Partida, 2018). (Pineda Partida, 2018, p. 148)

For UNESCO, "the main function of community radio includes encouraging democratic processes at the local level, giving a 'voice' to the poor and marginalised, increasing the diversity of content and pluralism of information at the local level, thus reflecting and promoting local identity, character and culture, and fostering the creation of diverse voices and opinions" (Calleja & Solís, 2005, p. 148). (Calleja & Solís, 2005, p. 19).

In other words, community radio has a profile and specific objectives in which it is committed to the interests of the social subjects of its community in the face of different realities and problems, showing the diversity and plurality of the sectors and addressing specific problems (Calleja & Solís, 2005).

This means that it caters to a specific, well-segmented audience market, which needs information on community issues that affect the lives of its inhabitants, such as sustainable human development, gender equality, ethnic identities, the environment, the role of young people and their proposals, the protection of children and the elderly, education and health, thematic areas that are not necessarily present in private or commercial radio stations, although as information companies (Caro, 2007) they share an educational, cultural and political function.

In this way, when citizens organise themselves around a cause and have a social proposal presented in the form of ideas, opinions and languages integrated in radio, not only does it exercise freedom of expression in the public sphere, with the aim of contributing to a collective dialogue for the construction of consensus and debate that leads to co-responsible participation, but it also forms a radio project structured in a capitalist economic-political context in which it has a market segment and repeats models (of gender and business structure).

However, this does not mean that because a company of this type is developed in this context it has content that promotes the system; on the contrary, they are identified by "informing about what happens in their own community, questioning the actions of power when these are detrimental to the majority, offering spaces for opinion and the exercise of the right to dissent, placing in the public sphere the interests that affect social life and promoting egalitarian dialogue between people as a form of counterweight to abuses and excesses of political and administrative power" (Calleja & Solís, 2005, p. 27).

Following the exposition of the effect of the economy on cultural production, the managers of community radio stations and creative producers, or "communicators", and then the messages, can be evaluated by cases. "The motives and activities of these groups need to be analysed concretely to have a full understanding of media production. The extent to which media company owners prioritise economics, and the extent to which they are able or willing to influence production to achieve that prioritisation, are empirical questions." (Murdock & Golding, 1982)

### **Community radio project**

The production of a particular radio project within particular legal systems is interdependent also on technical-material, human, organisational and content elements. This is the result (ideally) of research (empirical or not) to define audience and social information needs (Araya Rivera, 2004).

Once the audience has been defined, "the objectives and goals to be achieved are established ... the human, material and economic resources required by the project for its implementation are also listed" (Araya Rivera, 2004, p. 193). In other words, the contents are chosen in order to offer a service.

The themes are specified in the radio programming, which seeks a business strategy (because it addresses issues of resources and audiences) and the narrative design of the radio space over time. (Moreno, 2005).

With the definition of the station's profile (characteristics of the radio programme, both in form and content), the production project chooses the ideal genre for the target audience: radio magazine, report, micro-programme, commentary, radio slot, round table, dramatisation, etc. The selection depends on the intention or objective of the radio station; on the previous research about the style and rhythm of life of the audience, as well as on the resources (technical and human) available to produce the programme (Araya Rivera, 2004).

In this way, conceptually, we can speak of a generalist radio station and a specialised radio station. The former has a variety of programmes with different functions (to inform, educate or entertain) arranged throughout the day with the aim of attracting listeners at any given moment. The second, the specialised, is based on a specific communication or information aimed at a specific segment of the audience, "characterised by the sectorisation of content and audience segmentation" (Moreno, 2005, p. 68).

This specialisation of the stations is also related to the economic phenomenon of media concentration, since the big players are the ones who have the number of stations to segment audiences (Haye, 2003).

In the technical-material elements included in the production budget, a line item is considered for the materials to be used (recording tapes, discs, etc.), equipment (console, microphones, headphones, computers, etc.) and recording studio hours. In addition, it is recommended to include in the budget the remuneration of staff per programme according to the periodicity of the programme (Araya Rivera, 2004).

The human requirements include the people who are willing to carry out the radio programme (director, producer, music producer, announcers, technicians, scriptwriters, reporters, etc.). They must not only be willing but also have knowledge of the medium and the language of radio. For example: an on-air producer must read commercials, public service announcements and news; operate control room equipment; prepare music for broadcast; and fill out the station log.

The result of these organisational elements are short- and medium-term work plans (time, available resources and objectives), implementation strategies and spaces for evaluation. These are proposed goals and objectives that are achieved "in periods that can range from daily to annual" (Araya Rivera, 2004). (Araya Rivera, 2004, p. 198).

However, the thematic selection of any radio station defines the type of radio according to its purpose or main form of communication (Moreno, 2005).

In the particular case of community radio, these are also radio projects. And although there are no recipes for production (Araya Rivera, 2006), they must comply with several of the principles described above in order to integrate the folder for applying to the Ministry of Communication and Transport (SCT). This documentation process for the preparation of the dossiers requires effort, knowledge of telecommunications and money, due to the detailed requirements established by the authority and the regulations themselves (Calleja & Solís, 2005).

In this regard, AMARC Mexico recognises that the granting of concessions has been delayed due to: inconsistencies in the documents that make up the proposal; inconsistencies in the power of the station with the population to be served, or of the transmission equipment with the initial investment.

In short, the radio production project is elaborated based on identifying the social need for information, that is, it is the document that defines and organises the radio programme (Araya Rivera, 2004). Likewise, it is necessary to know how the radio station works, its legal, labour and fiscal implications, etc. But also, specifically, "the context of society and the country ... to have the sensitivity to understand what is happening and what can happen in any of the spheres" (De Anda and Ramos, 2004). (De Anda and Ramos, 1997, p. 233).

These are located in impoverished communities and in 2003, on a tour of officials, it was observed that the broadcasting booths barely have the necessary equipment to transmit: two microphones, a console and in the best of cases, a small computer (Calleja & Solís, 2005).

A community radio project, in general, is the product of self-management processes of the communities, which "through reflection and discussion determine the need to have their own means of communication and expression, as an instrument of dissemination and visualisation of their specific problems, whether due to circumstances or to longer-term social processes" (Calleja & Solís, 2005). (Calleja & Solís, 2005, p. 28). Andrés Geertz, quoted by Calleja and Solís (2005), refers to a citizen profile and social sector of community radio and mentions the following characteristics:

1. They support and promote social changes necessary to achieve a fairer society.
2. They represent life projects linked to the struggles and demands of diverse groups and movements.
3. They call for and build access to the word for all groups and sectors of the population.
4. They take into account the priority needs of the communities they serve.
5. They represent and defend the cultural diversity of their environments.
6. They privilege the participatory dimension in their communication and institutional practices.
7. They do not allow themselves to be guided by profit as the driving force behind their actions.

In this way, human resources in community radio stations often, when they start broadcasting, "you see people just babbling into the microphone, they have a lot to say, but they cannot find the words, they lack the tools and communication skills, which little by little develop and their own forms and styles appear" (Calleja & Solís, 2005, p. 34). However, it could be said that the need to develop communication skills and the process of valuing oneself as a cultural subject is needed in different areas.

In the financial area, "according to the Norma Oficial Mexicana (NOM), the technical requirements are very costly so that in practice it is almost impossible to access permits (...) the NOM establishes very high economic factors that exclude the poorest groups from being able to comply with the technical requirements" (author's italics) (Calleja & Solís, 2005, p. 172).

By law, community radio stations are essentially financed by projects (national or international), by state or federal resources, and by the economic contributions made by the communities they serve and by voluntary work. However, the income of broadcasters can be a risk to autonomy and independence or be uncertain for the project "because they are located in impoverished and vulnerable areas ... they do not always have regular resources" (Calleja & Solís, 2005, p. 137).

Furthermore, with the digital switchover of radio and television and according to the technology to be adopted in the country, different transmitting equipment will have to be purchased at high costs for poor communities. (Calleja & Solís, 2005) Thus, community radio stations must generate income-generating activities so that the radio can fulfil its service function and guarantee the permanence of the social project.

This means that in Mexico, digital radio will not be of mass reach for about a decade, because of the limited number of receivers in operation and its high cost. On average, the investment is US\$80,000 to set up a station for digital transmissions from scratch, plus the additional cost of sending the signal from the cabin to the antenna (Lucas, 2018).

In addition, the regulations on the use of spectrum in the cabin-transmission plant links will have to be redefined, as "digital radio links demand a bandwidth of 400 KHz, which is more than double the figure set by public policy for analogue radio links, and concessionaires are then forced to hire Internet links or deploy fibre optics to connect the digital signal from the microphone to the antenna. (Lucas, 2018)

Thus, "improving the service has to do with the professionalisation of the radio, the updating and maintenance of the technical and professional equipment, the production of their own productions and training, all of which requires resources, which is why having financing mechanisms is indispensable [for community radio stations]" (Calleja & Solís, 2005, p. 40).

In addition to the financing, professionalisation and training of the professional team, it should be noted that technology is still a factor that conditions broadcasting, and also allows for the control of the industry. The report of the International Commission for the Study of Communication Problems completed in December 1979, led by Sean MacBride, warns that "Neither the structures of communication nor the messages transmitted are neutral. A choice of technologies reflects a value judgement as much as does the content of the programme. No message can be absolutely objective: implicit judgements are reflected even in the choice of terms used." (MacBride, 1980, p. 40)

They also noted in the report: "The factors involved in the process of concentration are various, such as technological changes and those arising from competition. This has led to financial control of other industries or banking firms and media mergers. This can encourage a minority to have the power to present its own views and values to the exclusion of others. "Conglomerates mobilise capital and transfer technologies to the communication market, but they also sell quantities of socio-cultural "goods" that serve as a vehicle for ideas, tastes, values and deficits very different from those prevailing in developing countries" (MacBride, 1980, p. 64).

At the heart of the MacBride report's discussion of technology is that "The information infrastructure of the Third World is impoverished. Scientific, technical, professional and managerial talent is in short supply ... The Third World cannot now produce its own information". (MacBride, 1980, p. 49)

Technological dependence in Mexico is increased by the prevailing policy based on the increasing import of foreign inputs and technology for transnational manufacturing export production (Medina Ramirez, 2004) (Olmedo-Carranza, 2014). Thus Mexico, with inhibited innovation, is at a relative and absolute disadvantage in international markets and is dependent on foreign technology (Olmedo-Carranza, 2014).

In the area of telecommunications, Mexico's dependence on the electricity sector and incipient development of software can be observed. And although different market sectors have grown, the Telecommunications Services Industry is of medium-low development in terms of technological development, penetration rate, traffic and capacity (Ordoñez & Bouchain, 2011).

This is significant because in the current context of a global model of knowledge capitalism, the telecommunications equipment industry is part of the infrastructure that enables the new articulation between the scientific-educational sector and social production (Ordoñez & Bouchain, 2011).

Moreover, technological transformation, based on the digitalisation of communication, is not an encouraging scenario for community radio stations, as their operation depends on the investment of large players in new technologies in order to make better use of the radio spectrum. However, local experience (cultural production) becomes relevant and meaningful content (Girard, 2003), which is transformed into knowledge to contribute to an effective understanding of a human communication system that generates better distribution of knowledge.

### **Radio production in Zapotec**

For the first time in Mexico, indigenous and community media were recognised in the LFTR, but there is no certainty for them about the support they should receive for their operation and development. These concessions for social-community use, according to the law, are granted to civil society that does not seek to operate for profit and that contribute to citizen participation and promote plurality and gender equality (Lay Arellano, 2013). (Lay Arellano, 2013).



From the end of the 20th century to the present day, approximately 200 community and indigenous radio stations have emerged in Mexico, driven by the people. According to Pineda Partida, these largely operate outside official regulations (2018). In addition, due to the discretionary nature of the concessions, from 1990 to 2000 only one permit was granted for community radio broadcasting.

A case of social use is that of the station 102.7 Fm Radio Comunitaria De San Pablo Güilá, Agencia del municipio Santiago Matatlán, an indigenous locality in Oaxaca, whose objective is to broadcast programming in their mother tongue (Zapotec from Valles del Noroeste).

San Pablo Güilá, municipality of Santiago Matatlán, is considered to be highly marginalised. It is located south of the capital of the state of Oaxaca, its population is indigenous and governed by its own internal normative regime. A large part of the population's main economic activity is agriculture, and most of the peasants are engaged in greenhouse agriculture.

According to the press release "Fideicomiso de Riesgo compartido", (Shared, 2017) the Federal Government, in the last 5 years, made a total investment in this indigenous community of 16.54 million pesos for economic development through agriculture.

The actions in the community developed through SAGARPA include, among others, the installation of 4.4 ha. of greenhouses; the installation of 9 pumping equipment with solar panels with a capacity of 35.15 kW of peak power; infrastructure and equipment for selection and packing with a high-tech computerised system which uses an electronic eye to separate by colour and size the qualities of the product, with a capacity of 10 ton/hr. to be able to attend to the 7,125 tons produced in 22 Ha of greenhouses by 17 organisations grouped in an integrator; and a plant for the production of biofertiliser with a capacity of 153 tons of vermicompost and 47 thousand litres of leachates. (Shared, 2017).

The station 102.7 FM Radio Comunitaria De San Pablo Güilá was set up because "there was a desire to have a community radio station, the people longed to have a radio station to transmit their culture, their language, their tradition and their customs." (Morales, 2019) In addition, the aim was to teach people to speak because "the people of Güilá are very shy, in other words, they are very shy when it comes to speaking in front of a microphone. It's hard for them." (Morales, 2019)

This objective was consolidated when Mr. José Vázquez presented to the Assembly (the community authority) the intention of giving the community a transmitter, the heart of the radio, explains Mr. Ángel Morales, a member of the San Pablo Güilá Radio Committee, in an interview.

The project was then discussed with various authorities in the town to set up a radio station, and with their support, resources were secured (Morales, 2019). In 2009, with the support of the Cabildo and the community, the equipment was installed to begin broadcasting.

For the first few years, the station worked with amateur broadcasters. Being a community with a "musical vein", the first people in charge were animators of the community groups: Quique Morales (audio engineer), Sergio Martínez, Adrián Santiago and Pedro Arrellanes, it is a community of musicians.

At the beginning, "we asked for support from those who knew a little, it was time and opportunity to come and develop. Then they came." (Morales, 2019) At that time it was almost *tequio* (unpaid work to carry out public works, based on solidarity according to Zepeda-García and Bravo-Salazar (2016)), because according to Morales (2019), they were not of service that is to say the need arose and although there was committee did not know as much.

The radio station transmits with a power of 570 watts, from 6 a.m. to 9 p.m. every day of the week from two offices in the Municipal Agency suitable as booths. The station's sound waves reach parts of Tlacolula; Totolapan on the way to the Isthmus; San Andrés Paxtlán, Sierra Sur; Ejutla and Ocotlán, although in the latter community there are commercial radios.

The administration of Radio Comunitaria De San Pablo Güilá rests with a committee appointed annually by the town council. The performance as part of the committee is a service to the community, i.e. there is no pay for these activities. "Each neighbourhood chooses who will represent them and the assembly determines the radio committee. The one that wins the most votes is selected" (Morales, 2019).

This committee is in charge of, among other activities, convening broadcasters; proposing programmes; managing the radio's Facebook page; proposing activities and events for live broadcasts; and producing announcements or service messages for the community.

For those who participate in the radio, it is a requirement, as announcers or as part of the committee, to speak Zapotec, to be bilingual, as the broadcasts are always in Zapotec and Spanish (Morales, 2019).

The committee is renewed annually (every 10 December), which allows for the inclusion of new announcers (who collaborate voluntarily and have jobs outside the radio) and to change the programme schedule. Although the outgoing committee "trains" its successors in the position, the new members can modify content and programming depending on the human resources available. Such an annual rotation of managers allows for working strategies that can be fresh and creative; however, it can also lead to ruptures with the audience or to products without content. One particular case is that because each committee generated an official Community Radio website, there are several that are not updated and for which the password is no longer known. In addition, the learning process of the broadcasters can be emotional for them, due to the criticism they may receive from the audience.

La Voz de Güilá lives on donations. The announcements at the request of a local business or in support of the community are not as long as commercial radio advertising, they are longer (five or six minutes), and have no cost, but they are also heard on the internet and the users are told the costs of the station and they decide to support their announcers.

They are conscious, they say I support the radio with 100 or 200 pesos; even when someone has a birthday they send them greetings and invite us to have lunch with the announcers. On other occasions it is not necessary to pay in cash, for example in exchange for the spots in a cake shop they negotiate cakes to celebrate the mothers on 10 May, it is an exchange, not a sale. It is a Guelaguetza (Morales, 2019). They also produce spots in Zapotec in which they promote democratic coexistence policies, for example to prevent gender violence.

The committee is also in charge of the finances of the radio station. Each person who makes a donation is issued a receipt, with the purpose of making a cash cut and submitting a report to the community authorities (if it is annual, it is submitted to the Cabildo), with whom they decide the destination or investment of the radio station's resources.

The annual committee acts as a producer, but is subject to the authority that represents the community. The committee's job is to propose the events, to make the project and to present it to the Councillor, with whom they discuss and define it. The economic aspect is calculated with great care because "we cannot give more to the people when we have no income and when the festivities approach and they know that we are going to broadcast, we invite them and they support us, little by little." (Morales, 2019)

Due to the lack of professionalisation, time and resources, the committee does not carry out complex productions (dramatisations, adaptations, etc.) that require more time and diversified specialisations such as scriptwriters, actors, music makers, sound effects specialists, etc. All of the station's work is done with Adobe Audition.

The radio station of San Pablo Güilá offers musical programming (continuous music) presented by announcers who use particular communication protocols to address the public and thus imbue the presentation with their stamp and identity, which is where the creativity and particularity of the radio station can be perceived. The music chosen is characteristic of the announcer on duty and ranges from "viejitas"; Chilean music from the region; "sierreña" music; pop-rock; reggaeton; rap; the rock; norteño; cumbias and music of the people from the children's band and local groups.

It should be noted that all the music broadcast is downloaded from different internet platforms, mainly youtube; the comments and information of the performer are also obtained from the network, "we are stuck without internet, because, for example, I am passing on the greetings and suddenly you ask me for a song, but I don't have that song, so if there is no internet, we just look bad to the audience" (Morales, 2019). However, as a radio broadcaster, they are unaware of the need to have the respective licence or authorisation to use the music, so they do not pay special annual royalties, as stipulated by the Federal Copyright Law.

They also have music (indulgence), entertainment and cultural programmes aimed at specific segments at specific times. For example, from 12 to 2 p.m. they broadcast "Música Campirana", a musical entertainment programme for construction workers; from Monday to Friday from 7 to 8 a.m. they broadcast "Raíces Culturales" by Professor Vicente Melchor; and from Monday to Friday from 6 to 7 p.m. they broadcast music by local groups. They also have a children's programme with an eleven year old boy as announcer.

The radio station is also linked, from 11 a.m. to 1 p.m., to Radio Extremo, the radio station of a fellow countryman based in Los Angeles, California, a programme that is "more active, he knows more about what is happening at the moment. It's something funny that he does, he lives with the people, he gives them advice, he talks to them and he likes that. (Morales, 2019)

Other events that the community radio promotes and broadcasts live are sporting and religious events. For example, the inauguration and mass of the Cross of the community pediment was broadcast live with the help of two wireless microphones, two channels and the antenna. In addition, on the "Saturday of Glory" in 2019, an event was held to promote sports, a mixed volleyball tournament for men and women. In this case, the radio has sponsors in order to raise funds for the prizes. "It's not much that we give in prizes, but the intention is for them to live together and practice sport." (Morales, 2019)

An eventual radio project that Voz de Güilá had was to broadcast stories in Zapotec. In this case, the production was more complex and they adapted to the needs of the product. In a "homemade" way, in the office that functions as an alternate production booth, a microphone was installed in the centre of a round table so that the whole group of storytellers could turn it around and narrate the stories. The technical support of the radio manager was to control the consoles, monitor the transmission, and look for sound effects and music appropriate to the story.

On the other hand, as a technological innovation by Ángel Morales, the radio events are broadcast live on video, via Facebook. "On the fourth Friday there was a basketball tournament, and what I do is broadcast live with a borrowed iPhone. We've just started to do it. Today also La Voz de Güilá is listened to on the internet through the application "Listen2MyRadio".

In the same vein, the committee also serves as Community Manager of the Facebook account to keep it updated and review requests for greetings or songs. "We keep an eye on what's coming up. Because then they tell us 'no complacen', that's why we have to keep checking." (Morales, 2019)

Despite being more than a decade old, the station 102.7 Fm Radio Comunitaria De San Pablo Güilá, still does not have legal recognition. In 2009, the World Association of Community Radio Broadcasters (AMARC) helped the community radio station to obtain the concession, but so far they have not been able to do so.

This "management is complicated, there are so many community radio stations that it is a little difficult for them to choose you to stand firm with them," says Morales (2019). In addition, because Radio San Pablo has annual committees, it does not comply with the protocols of official regulations. "For example, if you put in your paper in 2008, in 2009 it doesn't count because the committees change every year. We want recognition, but the community says it has to be an annual committee. And the people are usos y costumbres. And they can't move. (Morales, 2019).

To constitute a civil association the process is long and the community needs to invest money, "the people say no, because the radio does not generate money and therefore it should not be spent on it". In addition, as the committee changes every year, there are also some who work well and others who don't. "Not everyone cares about the radio." (Morales, 2019) The above refers to the fact that a natural or legal person can be the one who applies for a permit for a radio station. However, the "Secretariat established that for community radio stations, it was necessary for them to be legal persons, that is, they would be obliged to be legally constituted as a non-profit organisation. Despite this requirement not being established in the norm (...)" (Calleja & Solís, 2005). (Calleja & Solís, 2005)

This requirement, according to Calleja and Solís (2005), did not affect the registration of community radio stations, since one of its characteristics is "the collective ownership of a non-profit citizen project of public service and social benefit. (in addition) This figure allows radio projects to have funding channels through state and federal institutions, as well as international organisations recognised by the state, to strengthen their self-management capacity" (Calleja & Solís, 2005). (Calleja & Solís, 2005, p. 92) Although for Estación 102.7 this has been a setback.

However, this community radio station has not been requisitioned or notified of any legal problems. The Mexican Armed Forces, the Navy and the Mexican Army have visited the station, but only to discuss their work. Station 102.7 knows that the radio spectrum is monitored, but they believe that when listening to their content, the authorities are quick to classify them as community radio because they broadcast in Zapotec and because the duration of the announcements exceeds the regular commercial radio time.

The work carried out in San Pablo is "a community radio. We are a community radio, we are not a pirate radio, even though we are not registered," says Morales (2019). The community assembly is convinced that they cannot take away the equipment because "we are not talking against the government or politicians, or anything like that. That's why we don't get involved in those things, we don't want them to say that our radio is talking about sensitive issues, on the contrary." (Morales, 2019)

However, this year, La Voz de Güilá is reviewing the possibility of reopening the archives for the legal organisation of the radio station, but it has yet to contact the officials from other years.

Technologically, the 102.7 station in San Pablo Güilá faces challenges. They require internet service; in 2019 they worked with four gigabytes, but they needed six. They have two PCs and a Mac; two consoles (one with 12 channels), a recorder to use as a monitor and three microphones. But, most of their computer equipment is of radio age and they lack hard disk space on the computers, so they don't have archives of all their productions. In addition, with the inclusion of video-materials, they need a camera and an HD video-camera for broadcasting; to expand the contracted megabytes of internet service, and to acquire a receiver for satellite internet.

As part of the support of the community members, the residents of Chicago, Los Angeles, New York and Atlanta, donated a Mac computer to their radio station to update the computer equipment with which they started ten years ago. According to the last census, they have strong ties to their community and wait for the patron saint's day and other celebrations in San Pablo to participate.

Before, Morales says, "they were more supportive of the radio because they didn't hold these festivities on the same dates. For example, someone would say 'I'll put in five dollars' and between several people they would raise the money, and here the councillor has always coordinated with the donations they make". This money is invested in, for example, audio rental and some thanks for the announcers.

Another feature of the radio station in San Pablo Güilá is that it shares ideas and experiences with other radio stations, for example the one located in Tlahuitoltepec, "Bangu" which in Zapotec means cloud. Although they cannot always travel "because of work, because we cannot leave everything on the radio, or because of lack of economic resources", but they do go out two or three times a year. (Morales, 2019).

Regarding the professionalisation of their work, they are open to receiving courses and improving their processes. To this day they do not use a script, but with the word processor Word they write down the requests for greetings and songs, "there is my draft ... we put in reflections and news very little. In fact, we want someone to be there in the morning, but it's a bit difficult, it requires training, it requires training and more than anything else to be aware, to come prepared." (Morales, 2019)

Meanwhile, those who work at the station work to rescue traditions, customs and our native language, for example, as a committee, sporadic programmes are made in interview format in which topics such as "the numbers in Zapotec" or legends are rescued. They also look for the stories and tales of the community to record them on audio, "everything involves work, you also need the tools, to place them in a studio and record everything so that it is not lost." (Morales, 2019)

The annual committee is in charge of training the new broadcasters to speak into the microphone and to resist, "I tell them: the first day you are going to receive criticism, but they are not going to achieve anything, but you will, you are going to develop tomorrow, you are going to gain experience" and they are advised to research the music they broadcast so that they can make comments and the audience can empathise. It should be added that the leaders, the committee members, monitor the broadcast and "if a song talks a lot about smoking or corridos that say bad words", the broadcaster is advised to avoid it. There is a list that specifies inappropriate songs, and if a broadcaster makes a mistake, the alderman is called in. Although the work is rewarding for the broadcasters in itself, the committee incentivises the staff with a short trip to the Sierra Juarez or to the beach (if possible). "That way we manage to motivate them, but first they have to work" (Morales, 2019).

All the work described has an impact on the community of San Pablo Güilá "before, children who were five years old or younger spoke only Spanish, and since the emergence of artists with their own songs in Spanish and Zapotec, three-year-olds listen to them and sing them. And the adults who didn't speak Zapotec are starting to speak Zapotec. This is something very important. It is to see Zapotec being reborn again." (Morales, 2019)

Another commitment of the Voz de Güilá is that the community has the opportunity to participate and become more involved. For example, one February 14 the shops gave away balloons and chocolates, the radio called on the audience to call in to tell how they conquered their wives and win a balloon if it was a romantic story. But, "people are very lame and few agreed to tell their stories on air, sometimes when they found out they were on air, they hung up. Others wanted to compete off-air. It's funny" (Morales, 2019).

During this time, the Voz de Güilá has had "good narrators for jaripeo, good narrators for basketball, good narrators for groups, and there have also been artists who sing in Zapotec" (Morales, 2019). (Morales, 2019) Even without professional training "here you learn as you go along, so you more or less learn and take off."

Today, after ten years of work, the objective continues in the Voz de Güilá: "to spread culture, customs and traditions. The main thing is the mother tongue, to encourage sport and to please people with a song or two, as well as congratulate birthday boys and girls. But above all, we want to be a school for children to learn how to perform in front of a microphone," says Morales (2019).

With this, the social function of the radio is clear and it is not about making money. It represents the rescue of Zapotec and is a school for children who like to speak. It is a community radio. "However, some understand and some don't." (Morales, 2019)

### **Final reflections**

There is concern about the conditions under which information is produced and circulated in contemporary society. This debate encompasses the internet for development.

One consequence is research that is largely concerned with the accumulation or centralisation of infocommunication industries in Latin America (Becerra & Mastrini, 2010).

However, the answer is not only to close the gap by securing technology for rural residents in less industrialised countries; even if this were achieved, it would not solve the problem (Girard, 2003).

For the way in which information and communication activities are structured today - a landscape of concentration - raises questions about modes of socialisation and coexistence.

The issue of concentration is related to infocommunication companies that follow a cyclical pattern of storage, circulation, consumption and reproduction of information, showing that "their sole objective is entirely commercial" (Becerra & Mastrini, 2010, p. 44).

In Mexico, radio and television are an autocratic power, which can put pressure on economic and political projects that favour them. For example, "the Federal Law of Radio and Television was the frontal attack of the federal government and the private radio and television sector against community radio and television broadcasting". (Cadena-Roa, Falleti, & Cruz Olmeda, 2009, p. 62) It was thought that with a new media law, there would be a recognition of community radio, but it did not happen this way.

Community radio stations are a way of socialising information and coexistence in which the agendas and needs of a community are promoted, which are not satisfied by the large information networks. For example, the use of the mother tongue (other than Spanish).

In addition, these media are part of the freedom of expression rooted in citizenship, part of democracy, including diverse and pluralistic information and ideas.

With the Televisa law, community radio stations face legal-bureaucratic challenges that make them vulnerable in their social functions. This situation also "means that those who work in the media are not recognised as journalists and are unprotected as they carry out their journalistic work in unfavourable conditions" (Garza García, 2010, p. 114).

Community broadcasting has a capitalist-based environment to which it has to adapt, the result is not necessarily the production of cultural forms akin to the dominant ideology. According to García Leiva, "promoting the supremacy of economic-industrial criteria over socio-political and cultural considerations entails the danger of blurring the notion of public good that has guided the management of the radio spectrum" (García Leiva, 2013, p. 114). (García Leiva, 2013, p. 124).

This means that community-generated knowledge and experience is significant for democratic participation.

"The degree to which the criterion of the 'social purpose of the service to be provided' is preserved when allocating frequencies will depend on how policy and the market are articulated". (García Leiva, 2013, p. 112).

In the case of the station 102.7FM Radio Comunitaria De San Pablo Güilá, Agencia del municipio Santiago Matatlán, an indigenous community in Oaxaca, the support of the community (with work, donations in money or in kind, quotas and cooperation) and the social function it fulfils by rescuing the Zapotec language with bilingual transmissions can be observed. But at the same time, the production of content, technological tools and formats conform to the dominant forms of the system.

This assessment should not be understood in a Manichean or idyllic way; it is a description of a phenomenon in which content in the Zapotec language is only one part of the radio station's content production, which tries, on the one hand, to comply with the regulations in order to be recognised in its communicative work and, on the other hand, to adapt to the formats and technological tools available.

La Voz de Güilá is a community radio project with a well-defined target, serving a marginalised group with specific problems that the urban media do not address (such as recovering their language, music and legends), not only in terms of disseminating information, but also to build a space for dialogue among equals, to be heard, to shape their lives and to make decisions.

The radio station of San Pablo Güilá is located in a community where cooperation is part of the system of uses and customs, but this works against it when it comes to complying with regulations; the strength of the group is that it has a large number of musicians who participate as managers, creators and technicians. Thus, the road travelled shows their process of valuing themselves as cultural subjects in a legally and technically adverse environment.

In conclusion, when reviewing the Radio and Television legislation in Mexico and cases such as that of station 102.7 in San Pablo Güilá, it becomes evident that the issue that captured international attention at UNESCO in the 1970s is still valid: "If access to the media is confined to politically or culturally dominant groups, whether at the national or international level, there is a serious risk that patterns will be imposed that conflict with the values of ethnic, cultural or religious minorities" (MacBride, 1980, p. 1). (MacBride, 1980, p. 46)

The result of one group's hegemony in media use and market adaptation is biased when assessing some services and social impacts of communication. But neither is it desirable to deny the influence of the system on non-commercial projects, in a romantic way, at the other extreme of thinking. The work should focus on studies that weigh different perspectives in order to build policy proposals that are more relevant to the needs of a democratic society.

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## Design of a strategic model with Neurodidactics in Higher Technological

### Diseño de un modelo estratégico con Neurodidáctica en la Educación Superior Tecnológica

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#### Abstract

This research obeys the need of this 21st century, the era of knowledge, where education must reconsider its vision for the potentialization of student learning in technological higher education. Neurodidactics is a tool whose objective is to optimize the teaching-learning evaluation process, based on brain development, favoring learning with all the brain's potential. The objective is the design of a model based on neurodidactics in technological higher education, considering important elements for its application, and obtaining significant learning with critical thinking. Showing the elements according to the investigation in a case of use in the IT of Zitácuaro, for its creation of the model. The phenomenology provides the elements for the pertinent analysis to the design of the model. The design of a model based on neurodidactics gives teachers the opportunity to redesign themselves and identify the missing events to achieve their objectives in the learning of higher education students.

#### Resumen

Esta investigación obedece a la necesidad de este siglo XXI, la era del conocimiento, donde la educación debe replantearse su visión para la potencialización del aprendizaje de los estudiantes en la educación superior tecnológica. La neurodidáctica es una herramienta la cual su objetivo es optimizar el proceso enseñanza aprendizaje evaluación, basado en el desarrollo del cerebro, favoreciendo el aprendizaje con todo el potencial cerebral. El objetivo es el diseño de un modelo basado en neurodidáctica en la educación superior tecnológica, considerando elementos importantes para su aplicación, y obtener el aprendizaje significativo con un pensamiento crítico. Mostrando los elementos de acuerdo con la investigación en un caso de uso en el IT de Zitácuaro, para su creación del modelo. La fenomenología, proporciona los elementos para el análisis pertinente al diseño del modelo. El diseño de un modelo basado en neurodidáctica da la oportunidad a los docentes de rediseñarse e identificar los eventos faltantes para el logro de sus objetivos en el aprendizaje de los estudiantes de educación superior.

**Neurodidactics, Meaningful learning, Strategy**

**Neurodidáctica, Aprendizaje significativo, Estrategia**

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## Introduction

Neuroscience, in its definition, refers to several areas of knowledge that address the current levels of knowledge about the nervous system, involving sciences such as: neuroanatomy, physiology, molecular biology, chemistry, neuroimmunology, genetics, neuronal imaging, neuropsychology, mathematics, computational sciences, artificial intelligence, among others. Therefore, neuroscience is in charge of revealing the secrets of the brain and all the other components of the nervous system. An essential element is the functioning of the brain, it is the essential organ for our intellectual, emotional and psychomotor development. It is the one that allows us to perform those activities that define us as human beings (reading, writing, speaking, appreciating, composing music, performing calculations, learning a number of skills, as well as expressing our emotions).

The main purpose of neuroscience is to understand how the brain produces the marked individuality of human action. It is to provide explanations of behavior in terms of the activities of the brain, to explain how millions of individual nerve cells in the brain act to produce behavior and how, in turn, these cells are influenced by the environment, including the behavior of other individuals [VII, VIII].

Currently there is knowledge and appreciation of how researchers in the field of education, teaching staff and managers of educational institutions, are motivated in the innovation of the neuro concept with respect to offering companies contemporary elements that allow them to improve their marketing processes of their products, generation of products and services, thus contributing to the promotion of economies, contributing significantly to the progress of this concept of neuro (FALCONI and ALAJO, 2017). Demonstrating that great range of ramification for neuro terminology, providing within education, the real entities that give focus to the educational area, the understanding of the student, the importance of generating attraction of the student body to a center of studies, their active participation and identification with the institution and control their respective permanence in it; a traditional action of an educational institution is only to focus on how to capture students, but not to analyze what happens to them in the course, during the whole process in which they study and how they study.

Today, the great importance and relevance is the reconceptualization of education in the digital era, in which the great challenges that higher education institutions in Mexico, for example, assume in general, must be dimensioned, and which are framed in the accelerated informational development, which has an impact on the social, technical and economic aspects and has direct repercussions in education, in the so-called educational informatics, enhancing the practical meaning of computer media and their application to the specific educational context [I].

With the reconceptualization of education together with the field of neuroscience and neurodidactics, it is proposed to start this paper, the use of some neurodidactics strategies essential to improve the teaching-learning-evaluation process in the educational system, so that the student appropriates the knowledge effectively and can put it into practice to understand their environment and contribute to it significantly [VI].

Generating a model as a tool in the application of support for meaningful learning and critical thinking of students in technological higher education.

Neuroscience applied to education tells us that motivation and challenges are able to activate certain areas of the brain that help in the learning process, that we learn more and better in interaction with other people than individually and collectively, as it encourages free and natural experimentation of their abilities and skills. From this knowledge, plus that provided by education and psychology, emerges neurodidactics, a bridge discipline between neurology and educational sciences in which educational psychology also plays a fundamental role.

## Neurodidactics

It brings together epistemology, neurology, cognitive sciences, psychology of learning and pedagogy to understand and identify the best way to learn, which in turn allows us to organize the best way to teach. [4].

**Origin of Neurodidactics:** It is a relatively new discipline, no more than 20 years old. It was in 1988 when Professor Gerhard Preiss, a specialist in the field of mathematics didactics at the University of Freiburg began to write about pedagogy based on neurology, proposing to introduce a subject based on brain research and pedagogy, resulting in neurodidactics. The objective of neurodidactics is to design a teaching-learning evaluation process that enables or facilitates the creation of synapses to increase and enrich the number of neuronal connections, improve the quality and capacity to function as a human being for life.

**Significant learning**

Significant learning is, according to the American theorist David Ausubel, a type of learning in which a student associates new information with that which he already possesses; readjusting and reconstructing both pieces of information in this process. In other words, meaningful learning is not forgotten and is maintained in the student's capabilities throughout his or her life. The process takes place when new knowledge or information is related to the cognitive structure of the learner in a non-arbitrary and substantive way. Therefore, the teacher must not only provide the necessary materials to study, but also techniques and methods that make learning effective and meaningful.

Neurodidactics is a new discipline that studies the optimization of the teaching - learning - evaluation process, based on the development of the brain, or in other words: it is the discipline that favors learning with all our brain potential and achieving an impact on our environment.

**Methodology**

The objective of this particular research is the design of a model under the neurodidactic approach in students of the ITZ systems engineering career from 2021 to 2022. The general research work is much broader, in this article, only the design of the model under the neurodidactic approach will be included.

**Case study**

Instituto Tecnológico de Zitácuaro, Computer Systems Engineering, 7th semester project management course, from 2021 to 2022, 45 students participating in the study.

**Instrument**

ITZitácuaro has a questionnaire of 120 questions related to teaching performance, learning, quality of the materials provided and facilities, from which valuable information was obtained that is not far from the assumptions of neuroscience, neurodidactics. The questionnaire was previously validated by a group of experts from the central body of the Tecnológico Nacional de México.

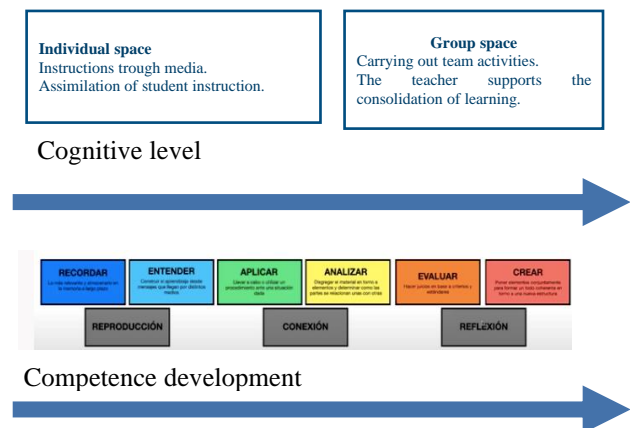
**Methodology**

In order to achieve the stated objective, the design of the methodology used for the collection of information was framed in a non-experimental research design, with a type of documentary research and an analytical level, based on a phenomenological approach to the educational fact in the given subject, seeking a perspective for the understanding of the various intervening variables.

It is important to note that in the application of neurodidactics many key elements must be considered, which in this study were classified in three phases.

**Phase 1 Moment of identification**

\* Curriculum



**Figure 1** Computer systems engineering degree curriculum

\* Contents

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\* Indicators



Figure 2 Competencies of the project management course of the computer systems engineering degree program

Software project management	
<b>Competence</b>	Applies methodologies and tools to guarantee the adequate management of a software project.
<b>General objective</b>	Manages software projects applying the elements, techniques and tools, in accordance with cost, time and scope commitments

Figure 3 Content of the subject of project management

\* Focused competencies

- Development of skills: communication, cooperation, creativity and critical thinking.
- Key elements: awakening and sustaining learning motivation.

Active and contextualized methodologies

Responding to complex demands and carrying out diverse tasks appropriately. Competence involves a combination of practical skills, knowledge, motivation, ethical values, attitudes, emotions and other social components and behavior that are mobilized together to achieve effective action.

Name of subject, lecture, course: Software Project Management	
	Unit, Block, Theme
Content block	Basic concepts for project management. Phases of project management. Project planning. Proposal. Personnel Selection and Evaluation. Project Supervision and Review. Reports. Project Management Fundamentals Institute.

Assessable learning standards	<ol style="list-style-type: none"> <li>1. Specify</li> <li>2. Use</li> <li>3. Discriminate</li> <li>4. Contrast</li> <li>5. Categorise</li> <li>6. Analyse</li> <li>7. Identify and describe</li> </ol>
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Figure 4 Definition of learning objectives based on Bloom's taxonomy

Phase 2 Flexible timing, motivation

- Contents
- Autonomy
- Context
- Teamwork

Tools to carry out phase 2:

Problem-based

Problem-based learning first presents the problem, then the learning needs are identified, the necessary information is sought, and finally the problem is returned; with this dynamic, critical thinking and problem-solving skills are fostered while actively learning the theoretical basis of the subject in parentheses.

The Flow

Flow or Optimal Experience is a state in which the person is completely absorbed in an activity for his own pleasure and enjoyment, during which time passes unnoticed and actions, thoughts and movements follow one another without pause. Mihaly Csikszentmihalyi formulated the theory of flow or theory of optimal experience in 1975 which he published in an article in the "Journal of Humanistic Psychology".

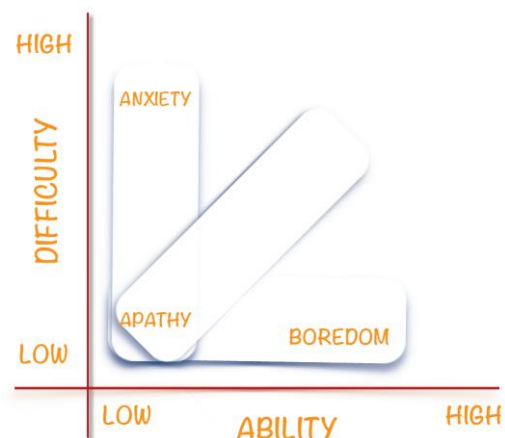


Figure 5 Diagrama del Flow. Mihaly Csikszentmihalyi GONZÁLEZ-RAMÍREZ, Claudia Teresa & VEYTIA-BUCHELI, María Guadalupe. Design of a strategic model with Neurodidactics in Higher Technological. ECORFAN Journal-Republic of El Salvador. 2022

- Narrative.
- Unit /thematic.
- Final reflection.
- Marker.

Criteria:		Skills to be developed:	
Objectives / Content:		Individual objectives:	
Activities	Indications	Comments	Delivery time

**Table 1** Follow-up of tools

**Phase 3. Evaluation momento**

- Active learning.
- Challenges- Rewards- Feedback.
- Teamwork.

**Elements of Formative Evaluation**

Diagnosis

- Identify the gap between the student's current state of learning and some desired educational goals.
- A gap that is too large causes the student to feel a sense of failure and demotivation.
- A gap that is too small makes the student feel that he or she does not deserve any effort at all.
- The correct gap corresponds to the proximal development zone, the area of opportunity.

Feedback

- On basic levels of student understanding and next steps to take.
- Effective teacher feedback provides clear, descriptive, and criteria-based information.
- The teacher must take the necessary steps to close the gap by modifying instruction and repeating the assessment if necessary.

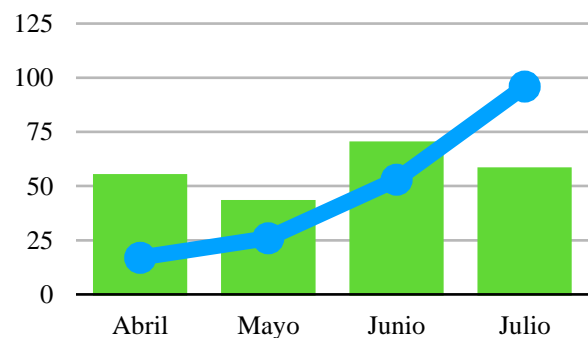
- Feedback enables students to improve their learning, enhances their motivation and sense of self-efficacy.

Student participation.

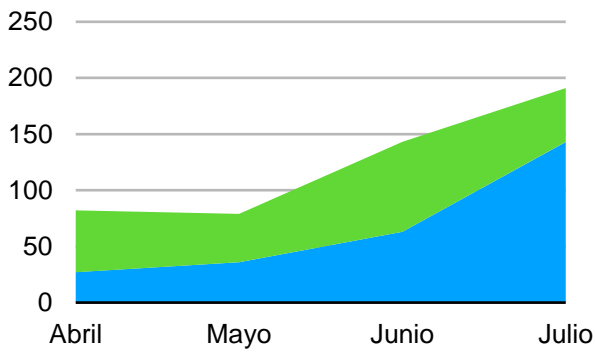
- Develop self-assessment skills
- Reflect on your learning and better understand the current state you are in.
- Develop self-regulation strategies, capable of adopting their strategies.
- Collaborates with the teacher to define success criteria for learning progress.

Learning progress.

- Progress should be structured on the basis of sub-themes that form the path to the final goal.
- Develop progress through the learning standards.
- Facilitates the teacher to locate the student's current state of learning on an ongoing basis
- The learner establishes the framework that allows him/her to interpret the learning evidences.
- It is vital to keep track of student activities and graph these quantitative partial results.
- Students' progress should be recognized with meaningful actions.



**Graphic 1** Follow-up of student activities



Graphic 2 Tracking of significant student activities

Cognitive skills development		
Emotional	Self-confidence, frustration management.	Self-assessment, learning to win, learning to lose.
Cognitive	Attention, memory, language.	Logical reasoning, executive functions.
Social	Respecting rules, teamwork, conflict resolution.	Active listening, cooperation, collaboration.

Table 2 Students' cognitive skills

**Results**

According to the actions taken in each of the phases, and the actions identified in the students, in an analytical way, the following Model is proposed.

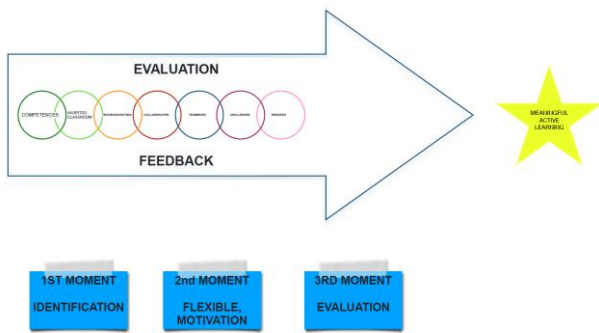


Figure 6 Proposed Strategic Model with Neurodidactics

In Figure 6 we can identify that it is a horizontal process, with valuable tools that a teacher can apply without difficulty, having the knowledge of the tool, determine the moments of its application or development, but throughout the model, feedback, also known as feedback, and constant evaluation must be carried out.

**Acknowledgment**

To the Instituto Tecnológico de Zitácuaro, in its systems and computing area, which is in charge of the computer systems engineering career, for allowing the application of this model. For showing enthusiasm in wanting to apply the model in the different subjects of the career and others that are in the institute.

**Conclusions**

Obtaining the Strategic Model with neurodidactics, applied in the career of computer systems, has allowed us to be disruptive in education, to visualize the importance of meaningful learning in students, since it is not only to train professionals, it is the integral formation of a human being who must impact his context in a positive way and ad hoc to the times we live in this XXI century. It is possible to work collaboratively, an element of impact on students and teachers, it is to innovate and grow by not seeing the student as a client, but as an entity that according to their emotions, their context, the tools that are provided for their learning is significant.

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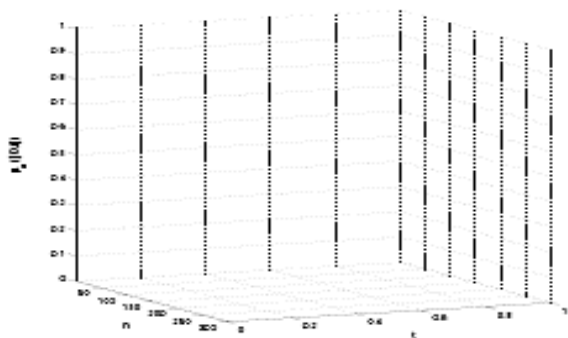
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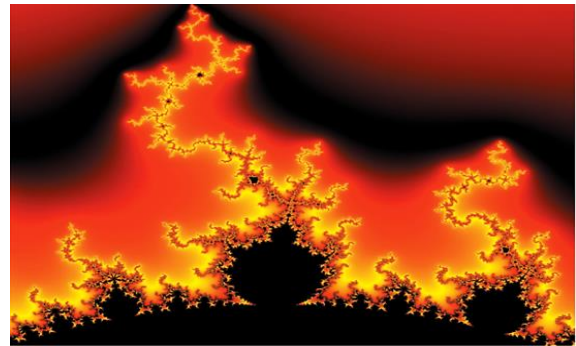
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