



**MULTIPLE INTELLIGENCES AS A STRATEGY IN THE DEVELOPMENT OF  
UNIVERSITY TEACHER COMPETENCES**

**INTELIGENCIAS MÚLTIPLES COMO ESTRATEGIA EN EL DESARROLLO DE LAS  
COMPETENCIAS DEL DOCENTE UNIVERSITARIO**

**INTELLIGENZA MULTIPLI COME UNA STRATEGIA LO SVILUPPO DELLA  
COMPETENZA DELL'UNIVERSITÀ DI INSEGNAMENTO**

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**ABSTRACT**

The objective of this study is to detect the types of multiple intelligences as a strategy in the development of teacher competences in the private universities of the Maracaibo Municipality, under the theoretical approach of Gardner (2011), Antunes (2006) among others. The type of research is descriptive, field, with a non-experimental, transactional or transversal design. The sample consisted of one hundred and sixty-five (165) teachers from the Private Universities of the Maracaibo Municipality. The data collection through the survey is 60 items, which twenty-eight (28) corresponds to the variable multiple intelligence profile and thirty-two (32) to the teacher's competences. The instrument was validated by ten (10) experts. A pilot test was applied to twenty (20) subjects, Obtaining

reliability of  $\alpha=0,89$  For the first variable and the second  $\alpha=0,94$ , By calculating Alpha Cronbach, Indicating that the instrument used is highly reliable. For the analysis of the results the SPSS program was used 19.0 With a descriptive statistical treatment based on arithmetic means, absolute frequencies, relative and cluster techniques. The results showed that multiple intelligences are useful for the development of teacher competences; This would contribute to the expansion of knowledge in students and therefore contributes to the improvement of their learning processes, With the conclusion that teachers maintain a very high level of multiple intelligences, As well as the competencies of the teacher.

**Keywords:** multiple intelligences, teacher competencies, universities.

### RESUMEN

El objeto de este estudio es detectar los tipos de inteligencias múltiples como estrategia en el desarrollo de las competencias del docente en las universidades privadas del municipio Maracaibo, bajo el enfoque teórico de Gardner (2011), Antunes (2006), entre otros. El tipo de investigación es descriptiva, de campo, con un diseño no experimental, transaccional o transversal. La muestra estuvo conformada por ciento sesenta y cinco (165) docentes de las Universidades Privadas del municipio Maracaibo. La recolección de datos a través de la encuesta es de 60 ítems, las cuales veintiocho (28) corresponden a la variable perfil de inteligencia múltiples y treinta y dos (32) a la competencias del docente. El instrumento fue validado por diez (10) expertos. Se aplicó una prueba piloto a veinte (20) sujetos, obteniendo una confiabilidad de  $\alpha=0,89$  para la primera variable y la segunda  $\alpha=0,94$ , mediante el cálculo de Alpha Cronbach, indicando que el instrumento utilizado es altamente confiable. Para el análisis de los resultados se empleó el programa SPSS 19.0 con un tratamiento estadístico descriptivo basado en las medias aritméticas, frecuencias absolutas, relativas y técnicas de cluster. Los resultados arrojaron que las inteligencias múltiples son útiles para el desarrollo de las competencias del docente, esto contribuiría a la expansión del conocimiento en los estudiantes, y por lo tanto contribuye a la mejora de sus procesos de aprendizaje, arrojando como conclusión que los docentes mantienen un nivel muy alto de las inteligencias múltiples, así como las competencias del docente.

**Palabras clave:** inteligencias múltiples, competencias del docente, estrategias.



## RIASSUNTO

Lo scopo di questo studio è quello di identificare i tipi di intelligenze multiple come strategia per sviluppare le competenze dei docenti in università private Maracaibo Comune, sotto l'approccio teorico di Gardner (2011), Antunes (2006) tra gli altri. La ricerca è descrittivo, campo, con un non-sperimentale, transazionale o disegno trasversale. Il campione era costituito da 165 (165) insegnanti di private Università di Maracaibo Comune. La raccolta dei dati attraverso l'indagine è di 60 elementi, che il ventotto (28) corrisponde al profilo variabile di intelligenza multipla e trentadue (32) alla competenza dei docenti. Lo strumento è stato validato da dieci (10) esperti. Un pilota di venti (20) soggetti, test è stato applicato per ottenere una affidabilità di  $\alpha = 0.89$  per la prima variabile e la seconda  $\alpha = 0.94$ , calcolando Cronbach Alpha, indicando che lo strumento usato è molto affidabile. Per l'analisi dei risultati del SPSS 19.0 programma di trattamento statistico descrittiva sulla base della media aritmetica, assoluta, relativa e le tecniche utilizzate cluster frequenze. I risultati hanno mostrato che intelligenze multiple sono utili per lo sviluppo delle competenze di insegnamento, questo contribuirebbe alla espansione della conoscenza negli studenti e contribuisce in tal modo al miglioramento dei loro processi di apprendimento, gettando conclusione che gli insegnanti mantenere un altissimo livello di intelligenze multiple e capacità di insegnamento.

**Parole chiave:** intelligenze multiple, insegnanti competenze, strategie.

## INTRODUCTION

At present, Venezuelan society has focused on a process of significant change, providing an important value to knowledge as a relevant wealth of man, for being a central axis and motor of development life in the educational sector. Because of that, The commitment of the education sector is to form a holistic individual, Capable of promoting situations of discovery, Building knowledge and problem solving, Assigning this responsibility to higher education, Because it is a space in which the individual interacts, participates, Reflects and practices all the knowledge acquired, For the benefit of the societies.

In this regard, in all countries of the world, the national educational systems aim to preserve the accumulated culture and prepare its inhabitants to perform satisfactorily in the future society according to the socio-historical and contextual specifications of each country. The present civilization is characterized by recurrent rapid and drastic changes; Economic, social, political and technological, with which, it is difficult to decide what innovation should be preserved and it is almost impossible to predict what the future social reality will be.

Likewise, the changes are occurring in the context of university teachers, where he develops his professional activities and entail new approaches in the teaching-learning processes, changing the educational paradigm (Moving from focusing the teaching-teacher to one that should be student-centered learning).

So, The teacher needs to develop skills, attitudes, skills and values that allow, from their comprehensive training, Perform adequately and productively, Solving deficiencies that are manifested today, Situation that is reflected with the low quality of the works, little productivity of innovative studies, Disinterested in encouraging and stimulating. To highlight, that this situation is inferred by the little transcendence of the intellectual productions, Scientific and technological which are generated in universities.

In this order of ideas, It is necessary to develop tools to understand, analyze and Facing the challenges of teaching in different careers, Of private universities such as the University Rafael Belloso Chacín (URBE), University Rafael Urdaneta (URU) y University José Gregorio Hernández (UJGH), Since the teacher of these universities You will have to find, In his professional universe, A propitious terrain to make their ideas and their personality germinate.

It should be considered, Which corresponds to the university teacher Boost in students, the capacity: Reader, semantic-explanatory, numerical, logical reasoning, three-dimensional drawings, decoding, graphing and Knowledge skills: Sharing, cooperating, self-knowledge, self-esteem, Adequate motivation for the score, As well as to recognize their weaknesses, Their performance, willingness to study, techniques and time devoted to it; Including meta-cognitive activities.

However, the teacher, Counts with the tool of the use of the multiple intelligences like strategy, Since they manifest directly transferable actions facilitating the understanding in the academic area; for this reason, These tools allow to improve the role of the teacher in the classroom, Providing systems to stimulate important aspects in the learning process, Focusing on a humanistic and participatory approach, Through a set of skills Oriented to motivate the capacity to solve problems or to elaborate products in a determined context.

The above mentioned approaches converge on the educational reality of private universities such as the University Dr. Rafael Belloso Chacín (URBE), University Rafael Urdaneta (URU) and University Jose Gregorio Hernandez (UJGH), thence The requirement to revise the training model regarding the use of multiple intelligences for teaching and learning with a constructivist approach, That could generate changes in the students, mainly in the way of building their knowledge.

About, It is considered necessary to prepare teachers for the use of these multiple intelligences, that when applied Can contribute to a significant change in the construction of students' knowledge, especially the engineering career. Based on the purpose of the study, the following question arises: What effects generate the use of the intelligences in the construction of the knowledge of the students of the career of engineering?

For that, The study is contextualized In private universities such as Dr. Rafael Belloso Chacín University (URBE), Rafael Urdaneta University (URU) and José Gregorio Hernández University (UJGH), Starting from the following objective: To determine the effects generated by the use of multiple intelligences in the construction of the knowledge of engineering students, To diagnose how it is before applying the evaluation to teachers, To compare results After they develop such intelligences in the university classroom and thus evidence if there are significant changes in the construction of knowledge.

## **TYPES OF MULTIPLE INTELLIGENCES**

According, Gardner (2011) raises the theory of multiple intelligences seeks to articulate only a manageable number of intelligences that seem to form natural classes. Everything

leads one to believe that each natural class decomposes into several (or more) subcomponents. According to this expression, It remains open the possibility of having a greater set of intelligences, according to the aims pursued.

On the other hand, in accordance with Armstrong (2012) drew up a list of seven basic intelligences (recently added an octave), according to him Constitute a functional relationship of the various kinds of intelligences. What is expressed by this author, Is evidence that multiple intelligences could be presented conforming the entire spectrum of learning abilities.

### **LINGUISTIC INTELLIGENCE**

In this regard, Language is the most important element for the development of communication, However, Its limitation may give rise to expressive weaknesses, It should be considered, That this intelligence is related to all other categories, but in a particular and very intense way with the logical-mathematics, Since it enhances the ability, to describe, to value, to relate, to draw conclusions and to summarize.

About, Gardner (2011) refers when people encounter the sounds of language or when they want to communicate something verbally. Nevertheless, Linguistic intelligence not only focuses on sound. It can also be activated from visual information, when a person decodes a written text.

### **LOGICAL-MATHEMATICAL INTELLIGENCE**

On the other hand, Individuals use, abstract relationships; To work in a scientific or logical way and the mathematicians, Who, in manipulating numbers, quantities, operations, express the ability to discern logical or numerical patterns, as well as the ability to use numbers effectively and to reason adequately using logical thinking.

According Gardner (2011) is the ability to analyze problems in a logical way, to carry out mathematical operations and to conduct research in a scientific way. Similarly, according to Antunes (2006) is associated with the competence to develop deductive reasoning and to construct causal chains to work with numbers and other symbols.

## **MUSICAL INTELLIGENCE**

Likewise, the ability of an individual to perceive everything related to sounds, is able to express themselves through them, is a person with facility to pick up tonalities, melodies, timbres among other things, and has abilities to play a musical instrument, to compose and to interpret musical pieces. This type of intelligence is identified in composers, music lovers, music teachers and sound engineers.

This intelligence According to Armstrong (2012) arises earlier in the individual. Thus, a study of this intelligence allows us to understand the special nature of music and at the same time to illuminate its relation to other forms of the human intellect. Musical intelligence is also evident in linguistic development, as the individual demands mental processes that involve the categorization of auditory references and their subsequent association with preconceptions.

## **KINETIC-BODILY INTELLIGENCE**

It has to be, one of the characteristics of the teacher, must be the ability to work skillfully with objects, both those involving the motor of the fingers, and the integral use of the body. It has social functions in the construction of apparatus; Who own it, like to arm and disarm things.

Indeed, Gardner (2011) affirms that, this type of intelligence offers, the ability to solve problems or to produce products using the body, or parts thereof. According to this author, this intelligence can be used as a didactic strategy by the teacher, because it implies the ability to use parts of the body or it's whole to solve problems or create products.

## **SPACE INTELLIGENCE**

According to Howard Gardner, That spatial intelligence refers to the ability to differentiate forms or bodies, distinguishing and recognizing the idea of space is important for the teacher, allowing you to orient yourself by identifying objects and images. In this sense, Gardner (2011) it indicates, spatial intelligence as the capacity to form a mental model.



Therefore, It is inferred that strategies related to this intelligence, could help the teacher to guide the student to solve situations related to space, distance, among others.

### **INTERPERSONAL INTELLIGENCE**

For its part, Learning presupposes the binomial formed by the teacher and the student, because the latter needs to learn or improve their knowledge about an activity; on the other hand, Learning is to change behavior from different perspectives. For this reason, explains why teachers require the strengthening of interpersonal intelligence.

According to Gardner (2011) is one that allows one to understand and work with others. It is the recognition of others, of empathic capacity; Expresses social skills (ability to communicate or interpersonal relationships).

### **INTRAPERSONAL INTELLIGENCE**

Likewise, intelligence involves the ability to solve problems or produce products. Similarly, The ability to solve problems, allows to approach a situation in which an objective is pursued; That implies the knowledge of the internal aspects of a person; for this reason, Gardner (2011) describes intrapersonal intelligence as one that allows one to understand and work with oneself; consequently, one thinks, that the teaching strategies related to this intelligence, would help the student to know internal aspects related to their weaknesses to reach these understandings, so that can use it as a means to interpret and guide their own behavior.

### **NATURALISTIC INTELLIGENCE**

As far as, this intelligence is that of feelings with nature and animals. At first the capabilities of the latter were included between logical-mathematical intelligence and visual-spatial intelligence but, Taking into account various cognitive aspects such as observation, selection, classification and classification skills, recognition of developmental sequences, as well as the formulation of hypotheses, applied in a practical way in the knowledge of the environment, Howard Gardner considered that it deserved recognition as



independent intelligence, since the subsets of this one are different from the rest of intelligences.

## METHODOLOGY

The methodology used quantitative field positivist. This study is considered within the positivist approach as a theoretical foundation, since positivism, is a philosophical doctrine where it is accepted as valid knowledge, the scientific knowledge obtained with the use of the scientific method, the facts are studied and from these, if they deduce the laws that make them valid. How do you know, from the pragmatic point of view, the positivist scientific view starts from the assumption that it is possible to advance the knowledge of reality taking into account the prior knowledge that exists of it.

It can be said that the present research will be methodologically framed within the descriptive type where it contemplates description, registration, analysis and interpretation of the processes, measuring the dimensions of the phenomenon to be investigated.

Therefore, taking into account these requirements and the methodological characteristics demanded by the study, the design of this research will be defined as non-experimental, since the variables of the phenomenon investigated will not be manipulated, but rather, existing situations will be observed, not intentionally provoked.

On the other hand, this research is located in the transactional or transverse type, where the measurement of the study variable will be performed in a single moment. In this sense, the same author describes it as the behavior of the variables of the investigation in a single moment, without pretending to alter its behavior; Making only descriptions of the state of the phenomena of study.

For the establishment of the population, It became necessary to determine the number of teachers constituted in the faculty with the highest deferred index Giving as a result The engineering career In the private universities of Maracaibo, such as the University Dr. Rafael Belloso Chacín (URBE), Universidad Rafael Urdaneta (URU) and Universidad José Gregorio Hernández (UJGH), Dismissing the polytechnic Santiago Mariño for being a

polytechnic and the Catholic University Cecilio Acosta (UNICA) for being a university offering only humanist careers.

It is made up of: 280 teachers, information provided by the school directors of each university (2015). Following the idea of population distribution, it should be noted that the universities of Maracaibo are composed of three institutions classified as follows (table 6):

**Table 1. Distribution of the teachers of the private universities of the Maracaibo Municipality**

University	Teachers
University José Gregorio Hernández (UJGH)	53
University Dr. Rafael Bellosó Chacín (URBE)	149
University Rafael Urdaneta (URU)	78
<b>TOTAL</b>	<b>280</b>

**Source:** Own elaboration (2015).

The universe of study was made up of 280 teachers, where the population is finite, according to Chavez (2008), to be finite must be constituted by less than one hundred thousand (100,000) units; As well as must be accessible, since it has access to all kinds of information by each of the individuals subject to the investigation.

### **SAMPLE**

After describing the study population, it was necessary to select the sample. According to Chávez (2008) he explains it as a representative portion of the population, and generalized the results of an investigation. Likewise, the author proposes the formation of units within a subset with the purpose of integrating observations (subjects, objects, situations, institutions, organizations or phenomena) as part of a population where, its basic purpose is to extract information that is impossible to study in the population,



because this includes the whole.

Further, for study purposes, a probabilistic sampling was used, according to Hernández and others (2008) describes it as a subgroup of a population where all have the same possibility of being elected, this sampling presents three modalities, according to Méndez (2009) they are: simple random sampling, stratified and by clusters. The simple random sampling in the first instance will be used to determine the sample of the present study, determining the population proportion and then applying stratified random sampling, where greater accuracy, precision or better distribution will be given to the sample.

However, Simple random sampling is the method by which they are assigned probabilities of equal selection to all in each of the elements integrated by the population. According to Sierra (2003) is based on achieving greater efficiency when there is evidence of the elements where they have similar expected behavior. For the present investigation, the simple random sample was calculated determining the teachers of the private universities of the municipality Maracaibo, according to equation established by the same author:

$$n = \frac{4 \cdot N \cdot p \cdot q}{E^2(N-1) + 4 \cdot p \cdot q}$$

Where

- : N            Population
- 4            Constant (Represents 95.5% confidence)
- n            Sample
- pyq        Variance, where p= 50% (0,5) Y q = 50% (0,5)
- E            Error, Represents 5% (0,05)



$$n = \frac{4 \cdot (280) \cdot (0,50) \cdot (0,50)}{(0,05)^2(280-1)+4 \cdot (0,50) \cdot (0,50)} \Rightarrow n = 165$$

Applying the formula resulted in a sample of 165 teachers from the private universities of the Maracaibo municipality. Where they will be distributed at Rafael Bellosó Chacín University (URBE), Rafael Urdaneta University (URU) and Universidad José Gregorio Hernández (UJGH).

### **SAMPLING**

After selecting the sample, it will be necessary to stratify it through stratified random sampling, where Parra (2006) mentions that it is obtained by dividing the population of interest into mutually exclusive or collectively exhaustive groups called strata, one sample selected for each stratum of Separately.

According to Sierra (2003) the sampling constitutes a set of operations performed by the researcher to select the sample that will integrate the same; the author described above describes the stratification, as one where the strata should be calculated proportionally in the same population. For the distribution of the 165 teachers of the private universities of the Maracaibo Municipality, we will proceed to calculate the stratification of the sample, using the formula established by the mentioned author:

$$n = \frac{n N_i}{N}$$

Where:

Ni: Size of the stratum to be evaluated.

N: Population.

n: Population stratum



$$n_1 = \frac{165 \cdot 53}{280} = 31 \text{ Teachers Universidad José Gregorio Hernández (UJGH)}$$

$$n_2 = \frac{165 \cdot 149}{280} = 88 \text{ Teachers Universidad Rafael Belloso Chacín (URBE)}$$

$$n_3 = \frac{165 \cdot 78}{280} = 46 \text{ Teachers Universidad Rafael Urdaneta (URU)}$$

When applying the formula, the sample will be constituted as shown in Table 7:

**Table 7. Distribution of the private universities of the Maracaibo Municipality**

Universidades	Población	%	Muestra
Universidad José Gregorio Hernández (UJGH)	52	19	31
Universidad Rafael Belloso Chacín (URBE)	149	53	88
Universidad Rafael Urdaneta (URU)	78	28	46
<b>Total</b>	<b>280</b>	<b>100%</b>	<b>165</b>

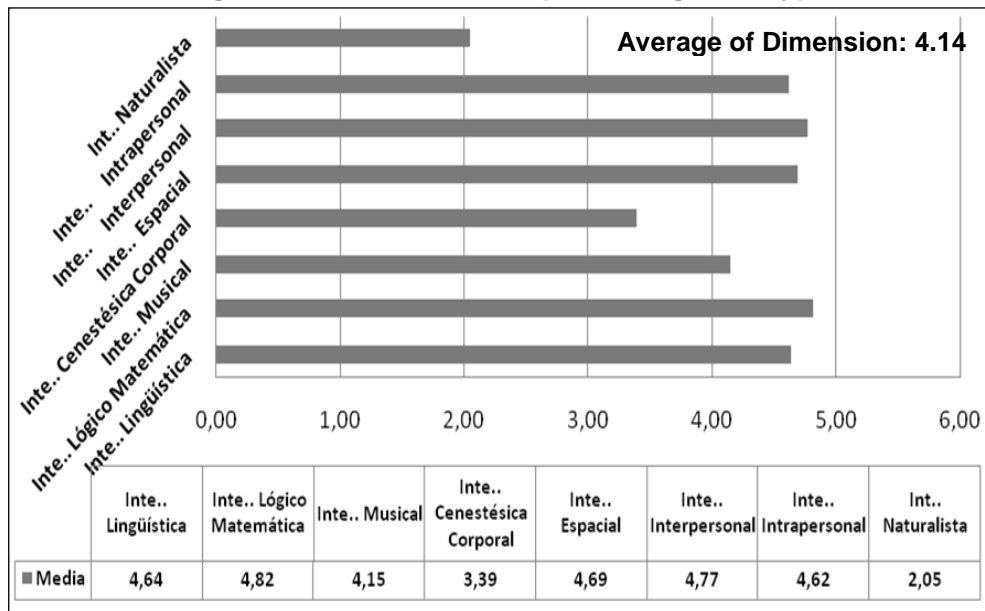
**Source:** Own elaboration (2015).

After applying the respective data collection instrument to the sample of 165 teachers in the study universities, these results allowed us to analyze the comparison of the information obtained with the theories that supported the variables and the comparison with what was presented by the different authors, thus giving way to the conclusions that will answer the objectives formulated, and pertinent recommendations, all in order to present a practical vision of the findings found in the present investigation.

For the effective application of the corresponding analysis, the selection of teachers in each university was proportionally determined, that is, each university contributed a certain number of teachers, which together coincided with the number of 165, as indicated by the sample mentioned above.

The results of the questionnaire applied to the teachers of the Universidad Rafael Belloso Chacín (URBE), the University Rafael Urdaneta (URU) and the University José Gregorio Hernández (UJGH) are presented below. Then, it starts with the corresponding analysis.

**Figure 1: Dimension Multiple Intelligence Types**



**Source:** Own elaboration (2016).

Observing the results obtained in Figure 1, it can be seen that the Multiple Intelligences Types dimension has been evaluated by the teachers in the categories of High analysis "with a mean of 4.14, indicating that the respondents recognize" almost always " The use and development of the types of multiple Intelligences strengthening the competences of the teachers in the private universities of the Maracaibo Municipality.

In this sense, when analyzing the indicators, we can see that the indicator of logical intelligence Mathematical obtained the highest category of analysis, demonstrating that "always" use the thinking and logical patterns when operating with numerical relations for their performance in the classroom. This result was obtained because this study was applied to teaching in the area of engineering.

The foregoing is in agreement with Pastora (2012) when she points out that multiple intelligences are presented in eight types of abilities: verbal, mathematical, spatial, kinesthetic-corporal, musical, intrapersonal, interpersonal and naturalistic. What is referred to by this author shows that there are many ways of being intelligent, where each individual exhibits a particular strength in each of the eight kinds of intelligences.

## CONCLUSIONS

It should be noted, in reference to the types of multiple intelligences based on the competencies of the teacher in the private universities of the Maracaibo Municipality. It is concluded that the majority of teachers have developed Logic - Mathematics intelligence by having the ability to solve mathematical problems, apply logic in their everyday life and mentally solve mathematical problems, as well as being able to communicate with their students assertively.

In addition, it also encourages and develops the management of emotions, including the use of colors, lines, forms and space to visualize, represent maps, models, sketches or other graphics relevant to the learning process of students.

It was also possible to know that most of the teachers have little ability in the naturalistic, corporal, and musical intelligences, sometimes enjoying the manual work, do not involve elements of the environment to strengthen their labor field, To elaborate tools that allow him to execute his competences.

An our opinion it is important to attend to the diversity of each person, and not to focus only on those relevant intelligences within them, because this would cause them to have a notorious talent in mathematics for example, to diminish their musical or linguistic talent. The idea is to take advantage of all these characteristics that somehow help to improve learning processes.

It is necessary to achieve not to homogenize the education, and that is the same for all, but on the contrary it is necessary to practice all the strategies that allow educating in the diversity, from the equality.





## BIBLIOGRAPHIC REFERENCES

- Antunes, C. (2006). Juegos para estimular las inteligencias múltiples. España. Editorial Narcea.
- Armstrong, T. (2012). Inteligencias múltiples. Cómo descubrirlas y estimularlas en sus hijos. Colombia. Editorial Norma.
- Chávez, N. (2008). Introducción a la Investigación Educativa. Venezuela. Editorial Talleres La Columna.
- Gardner, H. (2011). Inteligencias múltiples. La teoría en la práctica. España. Editorial Kairós.
- Hernández, R. Fernández, C. y Baptista, P. (2008). Metodología de la Investigación. México. Editorial McGraw-Hill.
- Méndez, G. (2009). Metodología. Colombia. Editorial El Búho.
- Parra, J. (2006). Guía de Maracaibo. LUZ. Muestreo.
- Pastora, M. (2012). Modelo Didáctico, Inteligencia Múltiples y Competencias Comunicativas. España. Editorial EAE.
- Sierra, R. (2003). Metodología de la Investigación. México. Editorial McGraw-Hill.