



RESEARCH ARTICLE

STRENGTHENING OF THE LEARNING UNIT: (ENVIRONMENTAL CULTURE) TO TRAIN ENVIRONMENTAL COMPETENCES IN STUDENTS, UNIT 12 A DEPENDENT ON THE UNIVERSIDAD PEDAGOGICA NACIONAL, MEXICO

<sup>1</sup>Yesenia Gabriel-Valenzo, <sup>1,\*</sup>Ramón Bedolla-Solano, <sup>1</sup>María Laura Sampedro-Rosas, <sup>2</sup>Benjamín Castillo-Elías and <sup>3</sup>Helinda Gervacio-Jiménez

<sup>1</sup>Centro de Ciencias de Desarrollo Regional, Universidad Autónoma de Guerrero, Acapulco, Guerrero· México

<sup>2</sup>Unidad Académica de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Guerrero, Acapulco, Guerrero· México

<sup>3</sup>Unidad Académica No. 2, Universidad Autónoma de Guerrero, Acapulco, Guerrero· México

ARTICLE INFO

Article History:

Received 22<sup>nd</sup> December, 2017  
Received in revised form  
20<sup>th</sup> January, 2018  
Accepted 22<sup>nd</sup> February, 2018  
Published online 30<sup>th</sup> March, 2018

Key words:

Environmental culture,  
Competences, environmental  
Education program, learnings.

ABSTRACT

To strengthen the Environmental Culture Learning Unit (ECLU) was necessary to design and implement an Environmental Education Program (EEP) attached to the (ECLU). The implementation of EEP was with students of the bachelor's degree, Educational Intervention at 12 A institution dependent on the Universidad Pedagógica Nacional (UPN), Chilpancingo, Guerrero, Mexico, during february-july, semester, 2016; The EEP basis and methodology were according to the competency model, with a constructivist approach; the activities were carried out, so that the students recognize the environmental problems and analyze them from their environments: natural, social and economic aspects. Didactic Strategies: Formative Learning Project and cooperative work were done during the implementation of this program; Also during the process was carried out the formative evaluation as improvement to the process of teaching-learning; with the purpose that the students were self-critical of their performance, co-evaluation and self-evaluation, achieving strengthening the environmental competencies proposed by Aparicio (2014). The results were satisfactory, according the perception and evaluation students showed responsibility, ethics, commitment in the care of the environment. Students built meaningful learnings and competencies.

Copyright © 2018, Yesenia Gabriel-Valenzo et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Yesenia Gabriel-Valenzo, Ramón Bedolla-Solano, María Laura Sampedro-Rosas et al., 2018. "Strengthening of the learning unit: (environmental culture) to train environmental competences in students, unit 12 a dependent on the Universidad Pedagógica Nacional, México", *International Journal of Current Research*, 10, (03), 67107-67112.

INTRODUCTION

One consequence of excessive anthropogenic activities is climate change, as Edgar Morin (2000), states that, globalization has been the best and worst thing that has happened to humanity, today we have better technological tools and in the world there is a wide and greater recognition of human rights; but at the same time, the changes undertaken have produced worrisome results: they have not brought about an improvement in the conditions due to the majorities and has not stopped, rather it has accelerated, the deterioration of the environment, among the most important. Environmental Education has become one of the transversal branches of the educational system, which enables the integral development of the students; The need for an education based on the understanding of environmental problems has arisen,

\*Corresponding author: Ramón Bedolla-Solano,  
Centro de Ciencias de Desarrollo Regional, Universidad Autónoma de Guerrero, Acapulco, Guerrero· México.

and oriented towards the training of individuals to solve these problems, based on the principle that the environment works in a systemic way, that is, if we alter a part of this will affect the other components of the system; in agreement, with Left (2005), it is an education that prepares to understand a world in transformation and so that new generations can be incorporated consciously and actively in the construction of a sustainable future. In 2003, the Universidad Pedagógica Nacional reoriented its educational offer, starting the Bachelor's Degree in Educational Intervention (BDEI), which in its curricular structure includes the optional subject of environmental culture, however, there are problems to offer it, teaching strategies and dissemination are required, that motivates the students to study it and strengthen the competences to identify environmental problems: contamination of the natural resources water, air and soil and elaborate proposals to take care of the environment; In addition, Unit 12 A does not have an environmental management program. With the aim of promoting a critical, ethical and responsible attitude towards

students in the care of the environment, in Unit 12 A, institution dependent on Universidad Pedagógica Nacional located in Chilpancingo, Guerrero, an Environmental Education Program was developed and implemented, adapted to the Anthology of environmental culture material, during the semester February-July 2016; because it is a study in the educational field, it was carried out according to the competency model, with a constructivist approach and a participatory action research, for it, previously, an evaluation of the environmentalization was made in the substantive function: the teaching, whose results showed the weaknesses in relation to the competences of the teachers for teach the subject. Therefore, the activities based on the learning project and collaborative learning were designed; It was satisfactory that from the beginning of the semester, the students showed interest in studying the elective subject, they chose it among three others, they analyzed the environmental problems from their environments: social, environmental and economic and actively participated in some solutions.

### **Theoretical framework**

Due to the amplification of global warming, today we are suffering from floods in several parts of the world, caused by the accelerated melting of the Arctic ice sheet, as well as the melting of glaciers, the consequences of complex and non-linear changes in the Earth system is already affecting human well-being, such as: multiple and interrelated factors, such as droughts combined with social and economic pressures, that affect human security (UNEP, 2012); an increase in the average temperature above certain thresholds in certain places, which has had important consequences on human health, such as an increase in malaria cases; increase in the frequency and severity of climatic phenomena, such as floods and droughts, to unprecedented levels that affect both natural capital and human security; increasingly rapid variation in temperature and sea level rise that influence human well-being in certain places. Currently there is a solid theoretical framework appropriate to our cultural and socio-environmental context in which environmental education is defined as an emerging field that has the characteristic of being complex, interdisciplinary and transversal (González, 2007).

According to Martín (1999), environmental education pursues three types of ends: knowledge, skills and attitudes; In this sense, Gutiérrez (1995) affirms that environmental education is situated within education in values, together with education for peace, education for health and hygiene, civic education, intercultural education and coeducation, which have shared purposes by the transversal axes, seeking the attainment of universal values such as environmental protection, pacifism, equality, freedom and justice. The proposal that Covas (2004) makes, is that Environmental Education must be materialized taking into account the system of educational influences, where the core is the school, in which the teacher through the proposed methodological indications achieves the development of critical thinking and with this the student feels responsible to the environment of which he is a part. The development of an interdisciplinary didactic model where interrelated the approaches (systemic, community and interdisciplinary) of Environmental Education allows for greater orientation, teacher-alumni interaction and articulation between knowledge and environmental attitudes. In México, the role of universities to train professionals who can promote environmental development is recognized in the Action Plan for Sustainable

Development in Higher Education Institutions (ANUIES, 2001). According to Ferreira (2002), this plan is consistent with the Environmental Education Treaty for Sustainable Societies and Global Responsibility subscribed at the Summit held in Rio de Janeiro in 1992; one of principles, states: "the best way to deal with environmental issues is with the participation of all interested citizens at the appropriate level, everyone should have adequate access to information about the environment, as well as the opportunity to participate in the decision-making processes." Environmental education for sustainability, according to the competency model, should consider the constructivist theory and also the learning strategies used by the students, which affect the goals of an educational model; These affect the type of learning that is intended to be achieved. In this regard, Carretero (1993) argues: Basically it can be said that it is the idea that maintains that the individual -both in the cognitive and social aspects of behavior and affective- is not a mere product of the environment or a simple result of its provisions internal, but an own construction that is produced day by day as a result of the interaction between these two actors.

This study was conducted in the form of formal environmental education that according to Novo (1996), is one that is carried out through the institutions and curricula that make up the "regulated" educational action. A fundamental characteristic is its intentionality and specificity. Its first objective is the modification of the behaviors of those who learn, while this activity is carried out in educational institutions created for that purpose. It is not a simple addition of environmental issues to the curriculum, but it raises ethical and methodological demands that affect the very conception of teaching and the conditions in which learning takes place. In unit 12 A UPN, in Chilpancingo, Guerrero, a bachelor's degree in educational intervention is offered, the 2003 study plan, is based on the competency model and establishes as a general objective to train an education professional capable of performing in various fields of education. educational field, through the acquisition of general competences (specific to the field of education) and specific competences (those acquired through the different professional lines detected), which allow it to transform the educational reality through intervention processes, (UPN, 2002).

As it is a model of competences whose purpose is to strengthen environmental competences, it was proposed to work with the methodology of the Training Learning Project (TLP), the learning activities are organized around intervention projects that take place inside and outside the classroom, or of the institution. The purpose is that the contents of the subject propitiate the interaction teacher-students-community and motivate students towards the achievement of their professional skills. PAF training is based on the motto "learning by doing". This not only benefits the students, who learn with the practice, but also the population that receives the planned intervention in each one of them. Training through TLP means giving students the necessary autonomy to plan and carry out activities that are of interest to them, and assume the commitment to carry them out in the best way, according to performance standards. Likewise, during the implementation of the environmental education program, the formative evaluation was carried out, because it allows to identify the problems and difficulties of learning and makes it possible to have a broader knowledge of the situation in order to identify opportunities; the evaluation is participatory, because it

integrates all the educational agents that intervene in it: the teacher, the student and the students' peers, it is also dual, because it addresses both the process and the results. In order to develop environmental competences, according to Environmental Education Program (EEP) attached to Culture Learning Unit (ECLU). the components of the environment axis, were taken from a research presented by Aparicio, Alviso, Beltrán and Sampedro, (2014), contemplated in table 1.

## MATERIALS AND METHODS

This is an action research, with a mixed approach (quantitative and qualitative), the program was in the formal mode, because it was adapted to the program of the Environmental Culture anthology of the Degree in Educational Intervention; We worked with 32 students from a total of 60 who were studying the third semester and who chose (from four elective subjects that were offered) the Environmental Culture Unit (Learning Unit).

### Design of the Environmental Education Program

For the design of the activities of this Environmental Education Program, the environmental competences posed by Aparicio, Alviso, Beltrán and Sampedro (2014) were considered; the conceptual theoretical framework contains three blocks: environmental education and environmental crisis, socio-educational diagnosis and socio-educational intervention project for an environmental culture; In order that each of the activities provide meaningful learning in the students, the proposal of a didactic methodology was taken Romero, *et al* (2007), which includes 5 elements:

#### Which includes 5 elements

- Needs and expectations of the students, an interview questionnaire was developed for the students, the objective of this was to generate an atmosphere of trust, which allowed empathy, the students' expectations towards the teacher were obtained, he contemplated the questions: Apart from studying what else you spend your time? Why did you choose the optional subject of environmental culture? What are the expectations you have of the course of this option? And what are your expectations of the teacher?
- Didactic Development: teaching strategies such as evaluation strategies that can be used during the course; according to Morín (2003) the strategy "allows, from an initial decision, to imagine a certain number of scenarios for the action, scenarios that can be modified; or the selection of these, a review of strategies used for Environmental Education proposed by Garcia and Nando (2000) Ponte, 2000) was carried out: Directed discussions, projection of videos, consultations on web pages, research on topics, application of interviews in environmental issues, field trips, reading analysis, project development, mental maps, composition and reading of stories. Likewise, the planning strategies contemplated the review of the previous topics.
- Curricular Guidelines: The course was programmed, assigning 72 hours distributed as follows: 36 hours of work under the conduction of the facilitator (classroom) and 36 hours of work under the conduction of the facilitator (field), among them they considered 20 hours

dedicated to autonomous learning that would promote the search of the necessary resources, to favor educational processes by competences, aspects that according to León (2002), allow autonomy, independence and self-regulation to "learn to learn".

- Environmental Educator. García (2004) states that "for an adequate professional development, a professional knowledge is essential that integrates, in a harmonious way, three basic components: academic knowledge, closely linked to the initial training of the educator, the knowledge acquired in the experience, and the educator's way of seeing the world ». In this sense, this harmony of these three elements is necessary for the proper development of an Environmental Education course, so that all aspects would be important to consider and achieve in the professional development of the educator, in a way that promotes in this one a complex and interdisciplinary vision; for this, the profile of the teacher is Licensed in Educational Intervention, with a Master's Degree in Teaching and Teaching Practice, a Master's Degree in Public Health, a Master's Degree in Social and Behavioral Sciences and a Doctorate Student in Environmental Sciences.
- Evaluation. In relation to the evaluation of the program, the formative evaluation is considered, a systematic process in which the actors participate in the construction or strengthening of a competence, it is necessary to clarify and understand the ideas or characteristics that give direction to the process and serve as criteria for application in the approach. Likewise, a rubric was created for the evaluation of activities, which in educational terms is defined as "the permanent action by means of which it seeks to appreciate, estimate and make judgments about the student's development processes as well as their results in order to to elevate and maintain the quality of them "(García, 1989); A co-evaluation and self-evaluation was also carried out. The portfolio and e-portfolios were used for the learning evidences that contained: mental maps, reports, essays, analysis exercises, problem resolutions, project reports, song compositions, poems and stories, schematic representations of assigned topics.

Each session contains activities designed with the constructivist approach for students to face in the approach of learning a new topic.

### Implementation of the Environmental Education Program

It began with an interview with the students individually, explaining that the objective of this is to generate an atmosphere of trust, which would allow empathy, which their expectations of the teacher are a commitment that is assumed. Apart from studying what you spend your time more, why did you choose the optional subject of environmental culture? What are the expectations you have of the course of this option? And What are your expectations of the teacher?

They were also asked to propose the aspects to be evaluated and their weight to evaluate. The programmed activities continued, which were co-evaluated by the students and at the end of the course they were averaged with a self-evaluation and with the evidences contained in the portfolio and e-portfolio.

## RESULTS AND DISCUSSION

At the beginning of the course, the students were asked individually with questions like these:

Besides studying, what you spend most of your time? 60% of the students answered that they work and 40% only study, in addition 50% of the students are parents; Why did you choose the optional subject of environmental culture? 70% answered that they had chosen the optional subject for being concerned about the environment, 10% because they like plants, 10% because they need to cover the credits of their electives, 10% want to know how the teacher works. What are the expectations you have of the course of this option? 100% said that I will learn a lot on how to do it to take care of the environment; and what are your expectations of the teacher?

interview conducted to the elderly, allowed the students to recognize how they were before the spaces and alternative solutions that older adults propose to solve the problem. The composition of a song, a poem or a story with themes for the care of the environment, they found very funny, in addition to showing their creativity for the compositions, they showed their appreciation of natural diversity.

### Report, other activities

The inventory of flora existing in Unit 12 A, allowed the students to recognize the concern of other people for the environment by having planted plants to receive oxygen and shade, while the students detected desert spaces and proposed to reforest them; By identifying the medicinal benefits contained in the flora found in their Unit, they were asked to

**Table 1. Components of the environment axis**

Components of the environment axis		
Knowledge	Abilities	Attitudes
Build knowledge about the interrelation of air, water, soil and ecosystems.	Analyze situations related to the environment. Evaluates the environmental impact.	Value natural diversity. Shows respect for the conservation and care of the environment.
Build knowledge about the natural resources of the state of Guerrero, Mexico and the world.	Develops sustainable development projects.	Possesses attitudes of responsibility in the search for alternative solutions to environmental problems.
Build knowledge about the use of natural resources.	Applies methods to mitigate the effects of environmental problems. Promotes the use of clean technologies (eco-technologies).	Take initiatives in the construction of collective solutions.
Build knowledge about the causes and consequences of environmental problems.	Works with creativity and scientific rigor in the solution of environmental problems.	



**Fig. 1. Students of the Educational Intervention Program, socializing their composition on the care of the environment**



**Fig. 2. Students of the Bachelor in Educational Intervention participating in the collection of solid waste in ravines**

In relation to the expectations that the students have of the teacher: 30% answered that they do not do an exam, 20% that is not very demanding, 30% that knows how to make the course dynamic, 10% that does not leave many readings, and the 10%: Do not disapprove or put me under 9; they were also asked to propose the aspects to be evaluated and their weight to evaluate. In relation to the proposal on the criteria to be evaluated and their weighting: 20 of the 32 students gave greater weighting to the exposures of 50%, 8 said that attendance is the most weight should be given to 40%, 4 students answered that the project should be the maximum evaluation with 40%. It was observed that the students showed difficulty in weighing the criteria, they would like to be evaluated on their performance. Regarding the development of the proposed activities, the photo-voice technique allowed students to individually demonstrate a contaminated natural resource: water, air, soil; later they exhibited them on slides and socialized, explaining what contaminates them and commented on the location of the contamination focus; The

search for information on web pages (use of electronic means) and socialized the results of their search, this activity motivated another activity:

Research and exposure of medicinal plants that exist in Chilpancingo, the students went to the herb stores, identified plants and the vendor told them about their benefits, but also consulted their properties and benefits in electronic sources and proposed to display them on a cardboard, others made a recipe book. With the elaboration of an Environmental Management Project, responsibility is shown in the exploration of alternative solutions to environmental problems. Regarding the evaluation of the proposed activities, it could be detected that the evaluation of the activities, strengthened the students' competences, being critical and ethical subjects before the performance as evaluators of their peers. Also, motivated to develop better activities because they themselves knowing that they would be evaluated by their peers put the challenge to be more creative in their exhibitions.

**Table 2. Themes and activities of the environmental education program**

Environmental competence	topics	activity
Explore the causes and consequences of environmental problems. Group exhibition:  It raises knowledge about the interrelation of air, water and soil: Generates knowledge on the conservation and use of natural resources and recycling:	Pollution of water, air, soil; animals in danger of extinction, global warming, climate change, ecological disasters. Instruments to measure the contamination of water, air and soil. Organic and inorganic waste, Solid urban waste Ecotechnics.	Investigate on web pages and expose the results (as a team)  Investigate in Websites and their Exhibit ( team up) MAKE PIÑATAS AND OTHER ITEMS WITH RECYCLABLE MATERIAL (AS A TEAM)
POSES AND ANALYZES SITUATIONS RELATED TO THE ENVIRONMENT IT RELATES THE ENVIRONMENTAL PROBLEMS WITH THE EXISTING SOLUTION ALTERNATIVES:	Identification of places that present environmental contamination Structure of an environmental management project; Government Institutions and Civil Associations responsible for monitoring the care of the environment, Normativity	Collect evidence in photography for exhibition and analysis. (team up) Investigate those Government institutions and civil associations that are responsible for monitoring the care of the environment and regulations. Interviewing Older Adults How was the previously contaminated area previously? (as a team) and explain the comments obtained.
Value natural diversity:	Flora, fauna, aquifers in the State of Guerrero	Compose a song, a poem or a story; develop an inventory of flora in the UPN, investigate and expose the results on: medicinal plants. (team up)
Demonstrate responsibility in the exploration of alternative solutions to environmental problems: Promotes initiatives in the construction of collective solutions and collaborates as a team	Environmental management project  Pollution of springs, Deforestation	Describe: location and type of pollution, regulatory regulations, develop solution proposals (as a team) Implement environmental actions, talks with the community to care for the environment, Clean a contaminated area / reforest (as a team).

The self-evaluation at the end of the course was averaged with the results obtained in each activity evaluated by their peers, in addition to the evidence contained in the portfolio and e-portfolio. When passing on awareness, awareness and identification of environmental problems, the students proposed reforestation activities of Unit 12 A, cleaning of contaminated areas (desazolve of ravines); another student proposed a reforestation in his town, with the argument that there is still the sale of firewood but that the villagers do not plant trees and there is a lot of deforestation of the hills; Another proposed to develop a Project supported to Mexican Institution in charge of Reforestation, (Comision Nacional Forestal, CONAFOR), to provide trees and reforest the area he inherited from his grandfather who was an landholder. In this activity it was gratifying to see that the students joined the proposals and moved to the places without protesting that it was with their own resources, both for the purchase of trees and for the transfer to the Communities.

## Conclusion

Environmental problems such as air, soil, water and solid waste generation make it pertinent to reconsider lifestyles that contribute to improving environmental conditions that impact on the quality of life; considering that education means enabling harmonious coexistence between human beings and between them and nature, it is necessary to strengthen research and innovation capacity to produce clean technologies, less dependent on energy sources based on the use of fossil fuels, rationalize production and the use of natural assets and promote social justice. Implementing the Environmental Education Program (EEP), attached to Environmental Culture Learning Unit (ECLU), of the Degree in Educational Intervention, at 12 A, institution dependent on the Universidad Pedagógica Nacional (UPN), was an interesting experience, because, environmental competences are promoted in students who will be inserted into the teaching field, so they will encourage, also the environmental in their practice. From 60 students of the third semester, 32 decided to study, Environmental Culture Learning Unit (ECLU), environmental competences were integrated as knowledge, abilities and values in students took the course.

Environment competences were built with active participation from the beginning until the end of the course. They analyzed the context, identified environmental problems, explored environmental concepts and normativity, made proposals and implemented them. The majority of the students who took this course, were interested in the subject "environment", their interest was perceived to interfere in the care of the environment, the exercises carried out, allowed to promote skills in this field, this is reflected in their contributions, work done, identification of environmental problems and proposals that suggest. It can be concluded that the main objective of this, was achieved: to strengthen the environmental competences of the students and this, will impact the benefit of society, as future graduates in educational intervention and as professionals of education, they will show and they will share their values for the care of the environment. This project, took into account, what was proposed by Romero, et.al (2007b), about the didactic methodology, and this was very important. It is recommended, to have basis to design and implement Environmental Education Program (EEP), if it is necessary to promote the competences in this field.

## Consideration

It should be noted that during the course of the Environmental Education Program, there was cancellation of sessions for holidays, for the taking of the building by students, for the participation to demonstrations of teaching staff, for renovations of the building; however, the above was overcome with the students' proposal to do more fieldwork during the weekends. The students agreed with the teacher that the care of the environment should be through love and the verb love is not an imperative, so their participation was voluntary. Without a doubt this experience was imparted at all times, from theoretical discourse to practice.

## REFERENCES

- Aparicio, J., Rodríguez, C., Beltrán, J. and Sampedro, L. 2014. "Transversalidad del eje medio ambiente en programas educativos de nivel superior: el caso de la UAGro." *Revista*

- Iberoamericana de Ciencias*, Vol. 1. Núm. 1, 2014, pp. 163-172, México (Consultado el 22 de febrero de 2015)  
Disponible en: [www.reibci.org](http://www.reibci.org)
- Caride, J. and Meira, P. 2000. *Educación Ambiental y Desarrollo Humano*. Capítulos 4 y 5 del libro. España: Ariel Educación.
- Casanova. M. A. 1998. *La evaluación educativa*, México, Biblioteca para la Actualización del Maestro, SEP-Muralla, (pp.67-102).
- Covas, Á.O. 2004. Educación Ambiental a Partir de Tres Enfoques: Comunitario, Sistémico e Interdisciplinario. *Revista Iberoamericana de educación*. 34(2). 8 pp
- Díaz-Barriga, F. and Hernández, G. 2002. Constructivismo y aprendizaje significativo. *Estrategias docentes para un aprendizaje significativo México*, Mc Graw Hill, pp.23- 60
- Faladori, G. 2002. "Contenidos metodológicos de la educación ambiental", en *Tópicos en Educación Ambiental*, 4 (11), pp. 33-48
- García, J. 2004. *Educación ambiental, constructivismo y complejidad*. España: Díada. (Links)
- García, J. y. and Nando, J. 2000. *Estrategias didácticas en Educación Ambiental*. España: Aljibe. (Links)
- Left, E. 2005. Diez Años para Cambiar el Mundo. Encuentro Nacional de Educación Ambiental para el Desarrollo Sustentable. México, Aguas Calientes. 17-19., mayo 2005.
- León, A., Risco, E. and Alarcón, C. (s/fecha). Estrategias de aprendizaje en educación superior en un modelo curricular por competencias.
- Morin, E. 2003. *Introducción al pensamiento complejo*. Barcelona: Gedisa. (Links)
- Morin, E. 2000. *Los siete saberes necesarios para la educación del futuro*. Colombia: ICFES. (Links)
- Nieto and Luz María, 2004. Sabemos pero no actuamos ¿Cuál es el papel de la educación ambiental. *Revista U niv ersitarios*, 12(2):56-61
- Ponte, C. 2000. *Estrategias y técnicas didácticas en Educación Ambiental*. Caracas: Fedeupel. (Links)
- Romero, H., Nick, A., Moncada, R. and José, A. 2007. Modelo didáctico para la enseñanzade la educación ambiental en la Educación Superior Venezolana. *Revista de Pedagogía*, 28(83), 443-476. Recuperado en 10 de febrero de 2018, de [http://www.scielo.org.ve/scielo.php?script=sci\\_arttext&pid=S0798-97922007000300005&lng=es&tlng=es](http://www.scielo.org.ve/scielo.php?script=sci_arttext&pid=S0798-97922007000300005&lng=es&tlng=es).
- Universidad Pedagógica Nacional. 2002. Programa de reordenamiento de la oferta educativa de las Unidades UPN. México. p. 17
- Universidad Pedagógica Nacional. Licenciatura en Intervención Educativa. 2004. Sistema de evaluación de la licenciatura en intervención educativa. Documento de trabajo. México. 37 pp

\*\*\*\*\*