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# Virtual Tutoring in Mexican Computer Assisted Learning for Marginalized Populations

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## Abstract

This paper presents the results of scientific, pedagogical research, which goal was to reveal the main features and the role of virtual tutoring in computer-assisted learning for marginalized population analyzing the Mexican Care Program for Demand of Adult Education and its instruments: Meeting Points and Community Places. Author finds that the virtual tutoring in Mexican computer-assisted learning for marginalized population tutoring is an essential component of the educational process, is completely free, accessible and flexible. The users of the Mexican Care Program for Demand of Adult Education can have virtual tutoring not only in Spanish, but also in 63 languages of the indigenous ethnic groups. The virtual tutoring as part of the computer-assisted learning for the marginalized population is relatively recent tutoring modality and has had rapid development. It is a system of online academic activities planned, scheduled, registered, evaluated and followed up. The virtual tutor in the education for the marginalized population in Mexico acquires not only the general skills of e-moderating but also masters the specific psycho-pedagogical and psychosocial skills for mentoring a marginalized adult.

**Keywords:** Adults' Education, Computer Assisted Learning, Education for Marginalized Population, Mexican Educational System, Virtual Tutoring

## 1. Introduction

It is a fact that, as technological development advances, the use of new technology platforms applied to education facilitates the work of the tutors to guide, motivate and induce students' activities, so that they can build their own knowledge. In this sense, virtual tutoring is a process of guidance, help or advice, which the teacher makes on the student to achieve different objectives: integrate him into the technical-human learning environment, solve the doubts of understanding the content presented to him, facilitating their integration in the formative action, or simply overcoming the isolation that these environments produce in the individual, and which are a determining factor for the high dropout rate of students in these training actions.

On the other hand, does virtual tutoring create new forms of inclusion/exclusion: the connected and disconnected people? Is it possible to achieve that virtual tutoring becomes a mechanism of promoting for the less fortunate? The answer lies in the analysis of educational initiatives that make the virtual tutoring the main strategy of inclusion in the productive life of the most marginalized. Examples of the use of virtual tutoring by the vulnerable population are Meeting Points and Community Places of the Care Program for Demand of Adult Education developed by the Mexican National Institute for Adult Education. What are the characteristics of virtual tutoring that is implemented in these programs?

The aim of the research which results are presented in this article was to identify the main features of the virtual tutoring in computer-assisted learning for marginalized population realized by Meeting Points and Community Places under the Care Program for Demand of Adult Education belonging to the Mexican National Institute for Adult Education. This work is a documentary-bibliographic study, which was performed under the critical-dialectical approach, using research methods of analysis, synthesis, comparison, and generalization that were necessary to study the original texts and official documents, an organization of the studied material and its exposure.

Thus, the analytical method allows examining the documents governing computer-assisted learning for marginalized in Mexico, systematizing its content, in order to visualize the organizational, operational and procedural model of virtual tutoring. The method of systematic-structural analysis facilitated the identification of the specific features of the organization of virtual tutoring in computer-assisted learning for marginalized in Mexico; the method of theoretical generalization provided the tools for the formulation and concretization of the conclusions and substantiation of research perspectives on the issues of the of virtual tutoring for marginalized in Mexico.

## **2. Results**

To the problems of virtual tutoring are dedicated numerous studies in Iberoamerican region: García-Aretio, 2001; Martínez, 2004; Muelas, 2004; Ugaz, 2005; Pagano, 2007; Sevillano, 2009; Aguaded-Gómez and Cabero-Almenara, 2013; Avila-Barrios, 2014; Santoveña-Casal, 2014; Going-Martínez, 2014, Pérez-Mateo and Guitert-Catasús, 2014; Vázquez-Cano and Sevillano-García, 2015, among others. However, the issue of the use of ICT in order to support the education of the poor people is not very explored by regional researchers.

So, for Pagano (2007), in the educational process in virtual environments, the tutor serves as supervisor and facilitator; his/her intervention should stimulate and guide the student, facilitating learning situations, help to solve the difficulties and providing the type of communicative bidirectionality; thanks to his/her work, education is personalized through systematic and organized support (Pagano, 2007).

In turn, Sevillano (2009) believes that it is the process of supporting the student from mobile communication where the mobile device becomes an extension of the senses: the user can capture information, images, signals and voice, issued or created by the tutor, at a distance at the same time or a different moment from when it originated (Sevillano, 2009).

On the other hand, Aguaded-Gómez and Cabero-Almenara (2013) state that virtual tutoring is a flexible modality, creates asynchronous query scenarios that allow space independence, communication and access to information; develops the competencies for self-organization, autonomy, collaborative and creative work, as well as for the search, selection, discrimination and analysis of information in different sources of consultation; includes less fixed content and includes open research and communication processes; gives importance to the motivation and interests of the students (Aguaded-Gómez, Cabero-Almenara, 2013).

Vázquez-Cano and Sevillano-García (2015) argue that virtual tutoring gives the possibility of going to the support of the tutor in any situation or context, learning in, with and from the environment in a restricted and broad sense; it enables the tutor to produce and disseminate information necessary for the student, so that learning can take place at any time and in any place (Vázquez-Cano, Sevillano-García, 2015).

Also, for Pérez-Mateo and Guitert-Catasús (2014) virtual tutoring as part of the ubiquitous educational environment (ubiquitous learning, u-learning), integrates in itself a series of principles and pedagogical bases appropriate to the learning objectives, as well as mediation technologies that comply with these bases and promote interaction with student. In the process of virtual tutoring the tutor acts as facilitator and e-moderator, and for its effectiveness the tutor must be kind, attentive, respectful and courteous, have cultural sensitivity, not to admit the use of sexist, xenophobic terms (Pérez-Mateo, Guitert-Catasús, 2014).

On the other hand, there are numerous studies on the problems of marginalized groups in general and in particular on the need for education of the representatives of these social strata as a strategy for their inclusion in productive work life: Boltvinik, 2004; Cabrera, 2011; Damián, 2004; Dresser, 1997; Duch, 2005; Gordon, 2004, 2011; Juárez-Bolaños, 2006; Lerner, 1996, 2006; Pieck, 2005; Rosas, 2005; Schulze, 2013; among others.

So, as Lerner (1996) points out, the programs to reduce poverty (including education for the most vulnerable) were devised and applied trying to rectify the errors of previous social policies. In these programs “[...] an attempt is made to adapt to the requirements of the new era, which is characterized by globalization” (Lerner, 1996, p. 94).

Following Dresser (1997), the fight against poverty and the implementation of socio-educational programs for those, who have less, become mechanisms of political manipulation of the poorest, are means to maintain clientelistic policies (Dresser, 1997).

In Gordon's opinion (2004), despite the application of the policies recommended by the international organizations (United Nations Development Program, World Bank, Inter-

American Development Bank, International Monetary Fund, among others), which suggested that poverty reduction could be achieved around economic growth fostered by the opening of the market that would result in greater welfare of the population through improved income distribution, the poverty has been increasing in Latin American region (Gordon, 2004).

According to Damián (2004), Mexico has been "[...] an experimental laboratory for structural adjustment programs in both economic and social matters imposed by international organizations, due to the fact that by the end of the eighties of the 20th century, the problem of poverty took on an unusual importance. These programs emerged as a mechanism to offset the costs of the adjustment that the implementation of the neoliberal model led to. However, history showed that the result has been disastrous. As a consequence, at the beginning of the 21st century, poverty in Mexico was higher than in the eighties of the twentieth century" (Damián, 2004, p. 150).

Likewise, Boltvinik (2004) sustains, that the socio-educational programs aimed at the poor, "[...] make two inevitable mistakes: the error of exclusion which consists in discarding the benefits of really poor individuals; and the error of inclusion, which lies in admitting non-poor people within the beneficiaries. By avoiding the misuse of resources to benefit those, who don't need it, we actually affect many, who are in a situation of poverty, leaving without support" (Boltvinik, 2004, pp. 320-321).

Concerned about the consequences that trigger reproduction of exclusion, marginalization, vulnerability, the authors conduce their studies to understand the underlying causes of these phenomena and propose solutions to its problems. For scholars, one possible amendment is an inclusive education for marginalized groups.

In addition, it must be emphasized, that the subjects of modern studies of Latin American researchers about the socio-economic marginalization (Castel, 1998; Wacquant, 2001; Botto, Fenoglio, Moulia, 2002; Boltvinik, 2004; Damian, 2004; Juárez-Bolaños, 2005; Cortés, 2006; Schulze, 2013, among others), are the people who appear in the margin of socio-economic relations, who have failed to adapt themselves to the new conditions of scientific and technological progress, of the "knowledge society", globalization, postindustrial economic, new labor skills. These people became "useless" in the new postindustrial society.

For Schulze (2013), the "promotion" of a marginal man implies not only his desired participation in different social spheres, not only the growth of his family economy, but also the "evolution" of his patterns, his traditional culture in order to achieve the redefinition of the roles and his full integration into globalized life. This can be achieved through education (Schulze, 2013).

So the analysis of the state of knowledge about the problem of the use of virtual tutoring in order to support the education of the marginalized, showed that while exists the interest of researchers in the topics on virtual tutoring in education, as well as there, are a vast amount of works on the problems of the marginalized. However the material on the use of virtual

tutoring in education of vulnerable groups will not be visualized. From this consideration this study is justified, and its current character states.

The study carried out showed, that one of the educational initiatives that make computer-assisted learning the main strategy of inclusion in the productive life of the most marginalized are Meeting Points and Community Places of the Care Program for Demand of Adult Education developed by the Mexican National Institute for Adult Education.

Through the examining the documents governing computer-assisted learning for marginalized in Mexico, systematizing its content, there were visualized the organizational, operational and procedural model of virtual tutoring in this education, same as below.

It is worth mentioning that although the building of Mexican system of computer-assisted learning for marginalized population started with the incorporation in the National Education Program 2000-2006 of a subsector program Education for Life and Work and creation of the National Council for Life and Work (2004), its antecedents are in the sixties and seventies of the twentieth century. It's about the implementation of ICT in Mexican education: radio and television began actively used, especially in rural communities away from big cities. Also, the study made it possible to reveal that in 1996 the Educational Satellite Network operated by the Mexican government in conjunction with the Latin American Institute of Educational Communication, began operating Zhizhko, 2016).

It should also be noted, that as a condition for the implementation of the approach of education for life and work and access to education for disadvantaged sectors are considered actions around lifelong learning. One of the key strategies for the proper functioning of Education for Life and Work was the creation in 2004 of the National Council for Life and Work (CONEVyT) as a coordination mechanism with reasonable base resources and sufficient management capacity.

The CONEVyT's objectives are to support and coordinate activities among the various agencies that offer this service, promote the implementation of new programs and define national policies in this area by promoting social participation through the use of technology and telecommunications allocating resources to priority programs.

Finally, it was proposed that, as a short-term policy, the CONEVyT achieves joint actions on education and training for work with various entities through a national system. Hence, it was considered necessary to achieve the articulation of institutions that provide education for youth and adults through CONEVyT to form a national system; advance the care of the lag with a quality education; and improve equity of Mexicans through education and training aimed at the population in poverty (Consejo Nacional de Educación para la Vida y el Trabajo [CONEVyT], 2005).

So, the priority subjects of education for life and work in México were set up the following: young people (15-24 years without basic education), Indians (five million), workers (three and a half million), workers requiring recognition of labor skills (fifteen million). It's

important to note, that to propose evaluation as an action that takes the CONEVyT, assuming the importance of monitoring and balancing processes to improve the political orientations.

The CONEVyT's projects are operated by the National Institute of Adult Education (INEA) through the State Institutes for Adult Education and delegations of INEA in the states achieving the decentralization of its administration. Considering the education of vulnerable groups, INEA developed the Care Program for Demand of Adult Education with Education Model for Life and Work (MEVyT), which is the basis for computer-assisted learning for the marginalized population.

The main purpose of Education Model for Life and Work is providing for young and adult marginalized population (who live not only in Mexico but also abroad, mostly in the United States) the basic education related to issues and learning options based on their needs and interests, so that helps them to develop the knowledge and skills necessary to function in better conditions in their personal, family, work and social life, improve quality of their life, raise their self-esteem and the formation of attitudes of respect and responsibility (Instituto Nacional de Educación de Adultos [INEA], 2013).

It was found out, that MEVyT is based in the postulates of Jomtien, agreements of CONFINTEA V, the Regional Framework for Adult Education, resumes constructivism and cognitivism and promotes flexible, diversified and open learning. MEVyT programs focus on the following lines:

- 1) Educational (literacy, post-literacy for youth and adults; programs for indigenous);
- 2) The economic survival (agricultural production projects, livestock, fisheries, forestry, etc.);
- 3) Social development (rural, community, sustainable, comprehensive, humane, for sustainable agriculture);
- 4) The organizational aspects (social enterprises, small businesses, cooperatives);
- 5) Legal, accounting and administrative management (marketing, financial services, defense of labor rights) ([Hernández, 2008](#)).

MEVyT is aimed at adults who have not started or completed their basic education or want to continue learning and allows people to recognize and integrate the experiences and knowledge they already have; enrich their knowledge with new elements that are useful and meaningful to their development; improve their ability to search and manage the information to keep learning; strengthen basic skills of reading, writing, numeracy, oral expression and understanding of the natural and social environment around them; explain in their own words the social and natural phenomena; participate responsibly in the democratic life of the country; strengthen the skills, attitudes and values that enhance and transform their life and their community in a framework of legality, respect and responsibility; take reasoned and responsible decisions, based on their creativity, learning, and application of scientific methods and logical procedures (Secretaría de Educación Pública, 2013).

Currently, the Care Program for Demand of Adult Education with Education Model for Life and Work is the basis for Mexican computer-assisted learning for marginalized. All MEVyT's programs are free and allow easy access for users: all its contents are located electronically on the official websites of MEVyT: <http://www.conevyt.org.mx>; <http://www.cursosinea.conevyt.org.mx/>; <http://mevytenlinea.inea.gob.mx/inicio/index.html> (CONEVyT, 2015).

It's important to note that the materials for each specific course are found in Spanish (the official language of Mexico); however basic literacy courses, as well as virtual tutoring, are proposed in 63 languages of the indigenous ethnic groups living in this country (see Figure 1).

1. Amuzgo. Módulo. MIBES 1
2. Ch'ol. Módulo. MIBES 1
3. Chatino Santos Reyes Nopala. Módulo. MIBES 1
4. Chatino Tataltepec. Módulo. MIBES 1
5. Chatino Yaitepec. Módulo. MIBES 1
6. Chatino Zenzontepec. Módulo. MIBES 1
7. Chinanteco Ojitlán. Módulo. MIBES 1
8. Chinanteco Usila. Módulo. MIBES 1
9. Chinanteco Valle Nacional. Módulo. MIBES 1
10. Chinanteco del Sureste Medio. Jujmii. Módulo. MIBES 1
11. Cora. Módulo. MIBES 1
12. Cuicateco del Centro. Módulo. MIBES 1
13. Hñahñú. Escribo mi lengua. MIBES 7
14. Huichol. Módulo. MIBES 1
15. Maya. Módulo. MIBES 1
16. Mazahua. Escribo mi lengua. MIBES 7
17. Mazateco Alta. Módulo. MIBES 1.
18. Mazateco Media Módulo. MIBES 1
19. Mixe Alta/Media. Escribo mi lengua. MIBES 7 (MIB 3)
20. Mixe Baja. Módulo. MIBES 1
21. Mixteco Alta 1. Módulo. MIBES 1
22. Mixteco Baja 1. Módulo. MIBES 1
23. Mixteco Costa 1. Módulo. MIBES 1
24. Mixteco de Guerrero. Módulo. MIBES 1
25. Nahuatl del sur (Zaragoza). Módulo. MIBES 1
26. Nahuatl del sur (Mecayapan). Módulo. MIBES 1
27. Nahuatl del sur (Pajapan). Módulo. MIBES 1
28. Náhuatl Sierra Nororiental (Cuetzalan). Módulo. MIBES 1
29. Náhuatl de Chicontepec. Escribo mi
30. Náhuatl Sierra Nororiental (Cuetzalan). Módulo. MIBES 3
31. Náhuatl Sierra Norte. Módulo. MIBES 1 (M y A)
32. O'dam (Tepehuano del sur). Escribo mi lengua. MIBES 7
33. O'dam (Tepehuano del norte). Módulo. MIBES 1
34. Ombeayiüts (Huave del Oeste). Módulo. MIBES 1
35. P'urhépecha. Módulo. MIBES 7
36. Popoluca. Módulo. MIBES 1
37. Rarámuri (Tarahumara). Escribo mi lengua. MIBES 7 (MIB 3)
38. Tenek (Huasteco). Módulo. MIBES 1
39. Tlapaneco. Módulo. MIBES 1 (segunda edición)
40. Tojolabal. Escribo mi lengua. MIBES 7
41. Totonaco. Escribo mi lengua. MIBES 7 (MIB 3)
42. Totonaco. Variante Cuetzalan. Módulo. MIBES 1
43. Totonaco. Variante Espinal. Escribo mi lengua. MIBES 7
44. Triqui Chicahuaxtla. Módulo. MIBES 1
45. Triqui Copala. Módulo. MIBES 1
46. Tseltal. Escribo mi lengua. MIBES 7
47. Tsotsil. Escribo mi lengua. MIBES 7 (MIB 3)
48. Xi'iui (Pame). Módulo. MIBES 1
49. Yokot'an Central. Módulo. MIBES 1
50. Yokot'an del Este. Módulo. MIBES 1
51. Yokot'an del Sureste. Módulo. MIBES 1
52. Zapoteco Costa NE. Módulo. MIBES 1
53. Zapoteco de la Sierra Sur/CO. Módulo. MIBES 1
54. Zapoteco Sierra Juárez. Módulo. MIBES 3
55. Zapoteco Sierra Norte. Módulo. MIBES 1



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| lengua. MIBES 7  | 59. Zapoteco Sierra Sur/Central. Módulo.                     |
| 30. Náhuatl de Guerrero. Módulo. MIBES 1                               | MIBES 1  |
| 31. Náhuatl de la Huasteca. Módulo. MIBES 1 (segunda edición)          | 60. Zapoteco Sierra Sur/NEA. Módulo. MIBES 1                 |
| 32. Náhuatl Sierra Negra/Zongolica. Escribo mi lengua. MIBES 7 (MIB 3) | 61. Zapoteco Sierra Sur/Suroeste Alto Ditsè. Módulo. MIBES 1 |
|  | 62. Zapoteco Valles/Este Central. Módulo. MIBES 1            |
|  | 63. Zoque. Escribo mi lengua. MIBES 7 (MIB 3)                |

Figure 1. List of basic literacy courses proposed in indigenous ethnic groups' languages by the Mexican system of computer-assisted learning for marginalized. Source: own elaboration based on INEA (2015). *Cursos MEVyT en línea*, <http://mevytenlinea.inea.gob.mx/inicio/index.html>

The study showed that this educational model of computer-assisted learning for marginalized operates through Meeting Points and Community Places (Pl@zas Comunitarias). First, are places provided by the community, including schools, churches, ejido houses, etc., where people gather, form study groups and obtain a comprehensive education service.

The Community Places are an operating strategy of MEVyT and a program in itself. As a strategy, they are defined as educational spaces open to the community, have computers and collections of printed materials, videos, CDs and other learning resources. The Community Places are installed in all states and municipalities in Mexico and in most states of the United States (CONEVyT, 2015), in addition, exist Mobile Community Places.

It are supported by the Service Center for Community Places, connected with wireless and iron resonant regulators and provided in every place the following computer and communication equipment: Computer software (Office); Computer equipment (1 server and 15 Lap tops); LAN (802.11b wireless network); Outboard (1 Multifunctional, 1 Projector, 1 Intelligent Blackboard, 1 DVD and VHS Reproductive, 1 Camera webcam, microphone and consumables) (INEA, 2013).

It was stated, that the pedagogical method of Community Places is based on the accessibility and flexibility of the content of teaching: each user study at his/her own pace and according to his/her possibilities and interests; he/she can count on the support of volunteer adviser (tutor), who is always present and available in the Community Places, or have virtual tutor support through internet access; when he/she feel ready, he/she can electronically file exams and get the official certificate of conducted studies (primary or secondary school or professional certification).

The Meeting Points and Community Places are coordinated by a headline, who incorporates voluntary consultants and organizes educational attention for learners. Using these

community spaces, learners may get *tutoring as personal advice* having personalized attention. In addition, studying online, adults experience the *virtual tutoring*.

This virtual tutoring consists of asynchronous communication between teacher and students via e-mail or other electronic device in a private and individual or public (group) form, which facilitates the orientation of the students by the teacher, the monitoring of the student's activity and allows to offer academic and personal orientations, specific and personalized. It allows supplying the teacher-student meeting in a specific physical location and at a certain time, to exercise a more adequate and personalized training and guidance, to deepen the knowledge of the doubts and interests of each student.

In fact, the Meeting Points and Community Places represent the space in which it is assumed as relevant the use of new technologies by the vulnerable population. In addition, in this educational model, the virtual tutoring plays a fundamental role. With the support of the new technologies, the tutoring are developed for multiple educational objectives, so that the student can "learn to learn", according to the evolution of society. Computer-assisted (virtual) tutoring is helpful in motivating students to improve their communication, work, and study skills.

### **3. Conclusion**

Succinct, the study carried out allows stated that the virtual tutoring as a part of computer-assisted learning for the marginalized population in Mexico, is relatively recent tutoring modality and has had rapid development. It is completely free, accessible and flexible. The users of the Mexican Care Program for Demand of Adult Education can have virtual tutoring not only in Spanish but also in 63 languages of the indigenous ethnic groups. The virtual tutoring is a system of online academic activities planned, scheduled, registered, evaluated and followed up. This activity is carried out under the general principles of e-moderating, such as psycho-pedagogical, psychosocial statements and specific principles of tutoring for the marginalized adult.

The virtual tutor in the education for marginalized population in Mexico acquire not only the general skills of e-moderating (understand the information society and online processes; change his/her spatio-temporal coincidence; learn to work with a diversity of codes other than verbal ones; have communication skills and online techniques; know how to value the veracity of online information; be an information consultant, course and material developer, academic supervisor; learn to design, moderate, guide, advise and manage media and learning environments; identify the advantages and disadvantages of ubiquitous learning), but also master the specific skills of mentoring a marginalized adult.

In order to carry out efficient virtual tutoring it is considered the particular characteristics of each student (individual differences between human beings increase with age), their experiences, aspirations, expectations, hopes, needs, interests; plan the activities following the integral interdisciplinary approach, develop in the tutors the basic, professional, methodological competences; promote their autonomous learning.

The virtual tutor in the education for marginalized adults in Mexico, bases his/her praxis on the principles of horizontality, participation, and synergism, where horizontality reflects the fact that both the tutor and the student are adults with certain experiential baggage, hence the relationships between them must be equal; both must be responsible for the planning, realization, and results of the tutorial process; both collaborate in order to achieve the same objectives, with mutual help, understanding, tolerance, respect, recognizing each one's mistakes and successes.

At the same time with the above, the virtual tutor in computer-assisted learning for marginalized population in Mexico has knowledge of modern theories that explain the behavior of an outcast; he/she understands that marginality not only extends to the person and the life of the marginal sectors, but it affects the whole society, it is a global problem. In fact, virtual tutoring in computer-assisted learning for the marginalized population in Mexico serves to build new forms of inclusion, become a mechanism of promoting for disadvantaged people.

It is considered appropriate to devote future researches about the virtual tutoring in computer-assisted learning for marginalized population in Mexico, realizing the quantitative and qualitative empirical studies about the following topics: how the virtual tutoring process takes place in real terms; what specific learning problems are presented by different groups of the most vulnerable population (workers, migrant agricultural laborers, farmers, indigenous, etc.), among others.

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