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DATABASES AND QUALITY OF SCIENTIFIC JOURNALS: THE CONTRIBUTION OF LATINDEX

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— *Abstract*—

Databases and scientific journals have had a long-term relationship expressed in the processes of registration, dissemination and access to scientific information. Through them, publishers have known and adopted a series of editorial quality criteria for their journals. This article deals with the relation between databases and journal quality, particularly the experience of the Latindex information system in Latin America. It also presents the new proposal of quality criteria that Latindex has designed for online journals, which is based on standards and best practices. The contribution to the quality of journals is addressed and a mention is made about the perception of some degree of uniformity in the adoption of quality standards and the tendency to have more formal criteria, as well as its evaluation against other types of indicators. Finally, it is advised on the need to make more transparent the editorial work aimed at reinforcing the perception of quality in open access publication.

Keywords

Databases, scientific and scholarly journals, quality criteria, visibility, standardization, Open Access, Latinamerica, Latindex.

The scientific journal has completed 350 years of existance. Since its appearance in 1665, its transcendence as a mechanism for the dissemination of scientific knowledge has been consolidated and has been widely recognized. Throughout its development it has undergone several transformations: its specialization, along with the emergence of new scientific fields; Its standardization, facilitating the continuous enrichment of its presentation and contents, as well as the transfer and dissemination of scientific information; Its marketing, which resulted in a powerful industry valued at some $ 25 billion dollars in science, technology and medicine alone (Ware and Mabe: 2015) and its technological transformation, largely impacted by the emergence of the Internet which prompted the emergence of online journals, marking a before and after in its long history. But perhaps one of the most singular characteristics has been its accelerated expansion and growth. Born in Europe, the journal was adopted in America and other latitudes of the world, being credited as the most effective means of communication to disseminate science, although with marked differences in its valuation, transcendence and impact.

The specialization of the scientific disciplines was undoubtedly one of the triggers in the increase of the number of published titles and articles, a situation perceived since the mid-nineteenth century. In order to facilitate access to this growing amount of information, the so-called bibliographic indexes emerged, which main objective was to register and disseminate the greatest number of published articles (Castro: 2011). The incorporation of technology- markedly the use of computers- gradually transformed the old indices printed in modern databases that were consolidated during the second half of the twentieth century and which, like scientific journals, are part of the information industry driven by developed countries. Since then, these information systems have exceeded their original objectives of disseminating and giving organized access to the contents of the journals, since they now offer services and very different aggregated values, and also serve as a sieve to establish differences between the many existing publications through the application of selection processes based on the quality of the journals and their contents.

The process of including a journal in a database has led to a long relationship between publishers of databases and publishers of journals. One of the substantive aspects that define this relationship is given through the evaluation of what is published. The selection process is perceived as an indispensable requirement in view of the increase in the number of new scientific publications around the world, a pheno-menon that particularly detonated during the second half of the 20th century when there was a sustained growth of 3.8% per year (Mabe and Amin : 2001) and which was

surpassed during the first years of the 21st century when it reached an increase of between 8 and 9% per year, which is equivalent to a doubling of world scientific production every nine years or more (Bornmann & Mutz: 2015).

This sustained increase, which does not seem to stop, has forced the databases to establish selection criteria which in general terms are quite similar to being based on standards observed worldwide, as well as good editorial practices. Given that the scientific communication processes have evolved and the current journal is far from the one in 1955, when the first quantitative evaluation exercises of scientific production appeared (Colciencias: 2016), databases periodically review their criteria and establish new parameters to differentiate the quality among publications.

This article discusses the contribution of the databases to the quality of journals and discusses new features for journals regarding editorial quality for online puiblications designed for Latindez information system (www. latindex.org). The article has been written with the aim of disseminating these characteristics and serve as a guide to publishers when they wish to postulate their journals to other information services, either regional or international.

DATABASES AND THE QUALITY OF JOURNALS

The postulation of a journal to a database is the response that the editors have to the demands of the authors to spread their contributions in the broadest and most effective way. When an academic sends the results of his work to a journal, he does so to fulfill the ethical commitment to make his research public, to make it known in the widest possible way, to obtain repercussion through the use and appointment of his works, as well as to be recognized in his academic or professional career.

It is also important because the acceptance of a journal in a database means a tacit recognition of its quality, besides being one of the mechanisms to achieve visibility. This visibility will make it possible to disseminate the publication in other latitudes, to obtain more readers and subscribers, to facilitate the reception of more contributions, to diversify the origin of those contributions and, finally, to obtain recognition, which positively impacts the chain of actors involved in the editing process: Editors, authors, editorial bodies, reviewers, as well as the publishing institutions themselves. In this sense, visibility is achieved when a journal achieves the means to spread beyond the institution that publishes it, facilitating that its articles are read by a wider community.

Databases generally design lists of criteria based on standards and good editorial practices, supported by the extensive experience of documentalist

who performs visual inspections on hundreds of journals according to the policies defined by each information service. The criteria are defined by thematic specialization, the type of journals or the geographic coverage of the database, but the incidence of aspects that are more related to database management costs is more frequent than to the quality of the journals. To assist in the process, they use the norms for the presentation of periodicals that aim to improve the quality of journals as a communicative tool and that the databases return in order to perfect the information transfer system (Delgado López-Cozar, 1999).

Depending on the purpose of each database, the weighting of intrinsic or scientific quality criteria may outweigh formal criteria, but the latter are indispensable for other relevant aspects that facilitate the databases to recognize the value of a publication and incorporate it into their collection. These other criteria serve the administrators of the databases to know how the journal is managed, how much it diffuses, how exogenous decision-making takes place within it, how endogenous it is in terms of the contributions it publishes, and how it credits the academic solvency of the people and institutions responsible for its edition.

In Latin America, it was not until the late 1990s that organized lists of quality criteria began to be widely disseminated. One of the pioneering initiatives in this regard was Latindex, a regional cooperative system that now has a presence in 24 countries in Latin America, Spain and Portugal, and also has partners including journals of Ibero-American interest published in North America, Asia and Europe. With two main products, the Directory of Comprehensive Coverage and the Catalog of Selective Coverage, Latindex has positioned itself as a must-referent when it comes to the quality of journals and interaction with publishers.

Latindex and other regional information resources such as SciELO (www.scielo.org) and Redalyc.org have formed a series of lists of criteria or parameters to identify and assess the editorial quality of Latin American journals, and have also encouraged in their respective areas of action the professionalization of editorial work. These three initiatives have resorted to cooperative work as a strategy to boost their results.

STANDARDS AND GOOD EDITORIAL PRACTICES. A NEW CONTRIBUTION FROM LATINDEX

In 2002, Latindex released its catalog to which only the printed and electronic journals that meet the requirements established by the system are allowed. The list for electronic journals included 36 criteria and was one of

the first in Latin America to be specially designed for academic publications available online. The 2002 version has been revised and updated in 2016, given the changing environment in which scientific journals are developed around the world. The new proposal is organized into distinct groups that include both normative criteria[1] as good editorial practices. Good editorial practices in journals can be understood as the set of procedures that, considering rules and policies, are the result of the experience of having proved their usefulness in the process of scientific communication. As with other journal evaluation lists, the highest number of criteria corresponds to norms, among other things, because it is the aspect most used by documentalists and because they disaggregate very relevant aspects to the process of scientific communication.

This section refers to the new quality characteristics that the collective[2] Latindex has discussed and designed for online journals. Although the new proposal consists of 38 characteristics, it should be clarified that seven characteristics of the previous list were merged, while ten are newly created. The new list includes six mandatory criteria and now the journals must meet 30 to obtain the Catalog category. For the purpose of this article, we distinguish the new list in normative criteria and good practices. The norms are broken down into those that affect the journal and its fascicles; those that impact on the structure of the articles and those that have to do with scientific quality. Good practices are divided into those that report on the degree of endogeneity and exogeneity of journals; its editorial management; Its editorial integrity and those related to online journals. This grouping aims to show that, although made for Latin American journals, most of Latindex's criteria respond to standards of validity and international application.

1. *Regulatory criteria regarding the journal:*

•   Compliance with periodicity. Respecting the declared regularity of publication is undoubtedly a crucial aspect for the good qualification of a journal. Many international databases require that the issues be published at the beginning of the reporting period. The delay or irregularity of publication is the reason that many Mexican and Latin

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1   For a complete list of ISO standards that regulate specific aspects of a periodical publication see: Delgado López-Cózar, Emilio. ISO Standards for the Presentation of Scientific Periodicals: Little Known and Little Used by Spanish Biomedical Journals. Journal of Documentation, 55 (3) June 1999, p. 288-309.
2   The proposal coordinator group was composed of specialists from the Council for Scientific Research of Spain, the University of Costa Rica and the National Autonomous University of Mexico.

American journals are not accepted into databases, or are withdrawn if they fo not maintain this requirement.

- Responsible editors. In the website of the journal the name of the editor or responsible scientist should be visible, as well as the names of the members of the different publishing bodies (publishing committee and editorial board, scientific board , redaction council or the equivalent that each journal names).

- Data of the editing entity. Includes the place of edition, and the name and address of the publisher. This information is helpful so that the databases have sufficient data to identify the origin and location of the journals. Journal web sites should include these elements, particularly the place of editing which is frequently omitted. For Mexican journals, this situation is avoided by observing the rules of the National Institute of Copyright on legal headings for online journals :Http://www.indautor.gob.mx/issn/documentos/electronica1.pdf

- ISSN. All academic journals must have an ISSN assigned. Editors should remember that there is an ISSN for each support in which a journal is distributed. This situation results in the same journal having more than one ISSN but the international system has established an ISSN that groups together all of them , usually the first thing one that was historically assigned to a journal, which identifies as a ISSN -L (L= link) . This ahould not be confused with the ISSN for online versions which is usually represented in the databases as e-ISSN. The editors also must know that a change in title (very common in our context) requires the request o f a new ISSN.

- Navigation and functionality. It is desirable that in a maximum of three clicks, the user can enter into content. The gateway is the table of contents or summary which must be organized by the types of documents published by the journal and which is especially useful when differentiating the "original articles or investigations" from the rest of published documents. It is also valuable to be presented in more than one language and that each article is accompanied by first and final pages in the case of PDF files.

- Periodicity. The journal should mention periodicity (including the dates that are covered), the number of fascicules edited a year or where appropriate, the declaration of continual periodicity.

- Definition of the journal. It must be a description that includes its objectives, the theme that is covers and public to which it is addressed. It is recommended that these definitions are concise, since the practice of including long presentations has been observed,

and they result to not be of much use or for readers and or potential authors, or for information systems.

- Institutional affiliation of the members of editorial bodies. Each name should be accompanied by their institutional affiliation (complete name of the institution and country).
- Information services. This refers to the databases which are included in the journal. It is recommended to classify them according to the type of service: directories, index and summary services, journals portals, journal categorization services , services for access policies and use of contents, list of national nucleus, among others.
- Instructions to authors. A vital tool for any author who wishes to contribute; It also facilitates editorial work because the rules governing publication are published within the journal. This Is of such importance that Latindex now considers it a mandatory characteristic in the case of online journals, and should always be visible on the website. Their presentation should be in sections (types of documents accepted, languages accepted for publication, revision or arbitration, bibliography, notes, etc.) is recommended.

2. *Normative criteria on article content:*

- Identification of the authors. Each published document must show the name of the authors. Using full names is recommended (especially to identify the authors gender) and the easy identification of the last names, which are used in the majority of the databases as an element for the ordering and recovery of information.
- Bibliographical letterhead at the beginning of the article. Formed by the full title or abbreviated title (assigned by the ISSN), the numbering of the journal (volume, part, months) and ISSN. It is useful to appear in the header of article and in the case of PDF files, in all pages indicating the initial and final pages.
- Affiliation of the authors. Item widely used in databases and indispensable for making metric studies. It is necessary to provide complete affiliations for each author: name of the institution (differentiated by internal levels: departments, faculties, schools, laboratories),and city name and country for each of the institutions. The use of connectors (numbers, letters and symbols) is recommended to easily identify the link between an author and her institution. In the event that an author does not have a institution it is valid to indicate them as a"worker, researcher or independent consultant" adding their personal contact information. Journals tend to include this type of curricular information (institutions

where they studied); this practice, widespread in Latin American journals can lead to false allegiances , especially when database documentarists cannot differentiate them. It is the responsibility of the journal to clearly denote which is the institutional data and which is the curricular data.

- Dates of receipt or acceptance of originals. This element allows us to know the time taken to process and publish an article. The date of receipt often helps to establish the primacy of a contribution over a similar one. It also reflects good editorial management and transparency by making the time the publication took to publish each article

- Summary . Must be present in all original articles and revisions, as well as for essays, short communications and technical notes, and not in other documents such as letters to the editor, editorials, interviews, news or book reviews.

- Key words . Similarly, key words should be integrated in all original articles and revisions, essays, short communications and technical notes,and not the other documents referred to above. For keywords, it is recommended that a thesaurus or controlled vocabulary from the special area is used.

- Summary in a second language. It can be seen that summaries occur in alternative languages to that of the full text. For Latin American journals it is almost a standard to present them in the national language (Spanish or Portuguese) and English. There are increasingly more journals that present them in these three languages.

- Key words in a second language. When the full text is available in Spanish or Portuguese, the absence of keywords in English may limit its diffusion in databases produced outside the region . When English is the language of the complete text, it is suggested that the keywords are also present in the national language, to strengthen the construction of the scientific language in the regional language.

- Bibliographic reference . Latindex recommends that they are based on a single recognized and widely used standard and widely used in the academic community. The mixture of various standards and their adaptation to create a "new" one does not encourage the exchange of information internationally and often complicates the work of databases, especially those working with references for counting citations.

3. *Normative criteria that affect scientific quality:*

- Arbitration system. A mechanism to validate the quality and accuracy of which is published. In the new Latindex list it is now a mandatory characteristic, with two essential components: 1. to be conducted by external evaluators and 2. That the journal mentioned the instance authorizing the final publication of a document, as an exercise of transparency in decision-making. For databases, it is not enough that the journal baldly declares that it applies a system of arbitration – it should detail the procedure that is used, describing all previous arbitration, as well as the kind of revision that is applied (double blind, simple blind, open online).
- Original content. Latindex requires a minimum percentage (40%) of content derived from scientific research or original creation for draft and original articles; in medicine, clinical cases and social sciences are also considered. The percentages don't depend on establishing each database, but also the type of journal, because those classified as "from scientific research" should mainly publish such content, unlike disclosure, teaching or journals of a technical character. It helps evaluators to differentiate the journal in its table of contents the documents derived from the original scientific investigation from other types of contributions.
- Requirement of originality. In the presentation of the journal or in the instructions to authors, the requirement to submit original work for publication should be explicit.

4. *Good practices to determine the degree of endogeneity / exogeneity of a journal.*

- Editorial opening. Scientific communication values that an academic publication shows elements of independence , reflected by the incorporation of members outside the editorial institution or its committees or editorial boards, scientific councils or redaction committees. Databases set percentages for the minimal number of external members, which in the case of Latindex is 66%.
- External authors. As in the previous point, it is appreciated that a majority of authors who publish in each number are external to the institution that edits the journal. The percentage required by the new Latindex characteristics is 40%.

5. *Good editorial management practices for journals:*

- Continual generation of content. It is important that online journals demonstrate that they are updating their contents and complying with their declared periodicity. In the case of those which release articles continuously, it is recommended that the publication dates of each new document are indicated.
- Number of annual articles published. Some information services have incorporated this requirement among its criteria and the number of articles depends on the theme of the journal and its periodicity. For Latindex, based on the various profiles included journals, it has established a minimum of 10 articles per year.
- Access and reuse policies. The publication of journals online has favored the establishment of policies of open access to information, which is why journals should clearly state which rights are conserved and which are given to their readers and authors. These policies are especially of interest for authors who want to add their articles which have already been published on a website or in an institutional repository, because it allows them to know the conditions that the journal provides for this purpose.
- Digital preservation policies. Also derived from the incursion of the scientific journal in the electronic medium, this approach seeks commitment from journals to implement policies to ensure the continued availability of content, regardless of technological obsolescence. As Latindex recommends, it is not enough that a selected digital preservation service logo is stamped, it should also detail the policies established by the journal.

6. *Good practices of editorial integrity:*

- Detection of plagiarism. Another practice that has taken new airs starting from the online publication ; It requires that journals publicize observing strategies to detect plagiarism and declare when it occurs.
- Adoption of a code of ethics. They should be addressed to the members of the committees or editorial bodies of journals, their editors and authors. They should favor transparency in the processes of evaluation, as well as communication between editorial bodies and authors. It integrates other elements, the guarantee that the unedited results which are obtained beforehand are managed in a confidential manner and are not used in any way by editors or

reviewers. Proper citation practices are also highlighted in order to avoid imprecise authorial attributions, or for the avoidance of manipulation of data or figures. It should also be noted to the reviewers regarding conflict of interest.

7. *Good practices specific to online journals:*

• Use of interoperability protocols. Interoperability is essential in the current scientific communication process as it allows the contents of the journals to be collected by other distribution of information systems ; the existence of metatags each article favors this practice and among them include the Dublin Core (http://dublincore.org/) which are the most well known.

• Using different editing formats. Initially, the PDF format was most often used, but there has been a development that has led and encouraged the widespread use of other publication models that facilitate hypertext and reading, such as HTML and XML. The availability of a journal in various formats increases the visibility of the published articles and their distribution.

• Interactivity with readers. It is one of the own characteristics of online journals in that they can offer RSS feeds, spaces for comments, discussion forums and blogs, among others.

• Added values. This item includes the integration of multimedia services (video and sound) ; the practice of releasing articles as soon as they have been accepted; the indication about how to cite the articles by following certain standards; the presence of the journal in academic social networks; access to so called raw data (statistics or annexations that for their length are very difficult to integrate into printed versions), as well as reading versions for the disabled.

• Search engines. Online journals must provide an engine that allows users to search through various indexes (titles, authors, keywords, etc.) as well as incorporating Boolean operators.

• Use of uniform resource identifiers. It is appreciated that all links that are provided by the journal are safe, which is why identifiers like URI, Handle or DOI should be used. Unfortunately, it is very common to run into frequent changes in articles' URLs that were already entered into the database as a result of changes in platforms by journals. This situation gives many broken links which translates into a loss of access by users and an additional workload for the information services to recover lost links.

• Use statistics. Journals should provide tools to identify the level of use of published articles.

Achievements and Challenges in journal quality

Like no other region of the world, Latin America has a fairly complete inventory of academic publications through databases that offer various services. Latindex for example, provides a broad and inclusive directory and a catalog that accounts for the editorial quality of the journal. In addition, there are various indexes and abstracts services in the region (*Clase, Periódica, Lilacs, Iresie, and Actualidad Iberoamericana*, among others), portals to full-text journals and institutional repositories. This regional visibility acts in response to the exclusion suffered by many of our journals in other databases and reinforces the value of what is published in journals outside the mainstream of science.

The publication and implementation of quality criteria lists help publishers in the task of improving the publications office, which also means new learning opportunities for editorial teams. Since lists are based on the compliance of international standards, journals are better prepared to apply not only to the regional databases, but to others outside the region.

Studies suggest that regional initiatives that have worked on and published quality standards have helped in making good Latin American journals, respecting their identities and addressing logic and internal dynamics of journal publishing in the region (Alperin and Fischman: 2015) . The evolution of the journals has been evident and appreciated in recent published work in a special issue devoted to Latindex in the Brazilian journal *Ciência da informação* (http://revista.ibict.br/ciinf/index) [3] . In this booklet, remarkable progress in fulfilling the periodicity, the application of arbitration systems, including data affiliate members of the editorial boards is listed, as well as the requirement of originality of documents in order to publish, among others. An outstanding evolution is also observed in terms of the visibility and quality of publications, as well as the impact that Latindex quality characteristics has had on the preparation of criteria for inclusion in other bibliographic databases.

In the case of Mexican journals, the quality of a group of journals in 1999 was (when a pilot test was applied for the Latindex catalog) compared to 2015, when the criteria were widely known. The results showed a marked improvement in compliance with almost all the features of editorial quality (Alonso Gamboa et al. : 2015). In the published works, there was interaction with publishers, as well as the positive effect on the professionalization of

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3   Special edition, corresponding to volume 44, number 2, 2015.

the Latin American publishing sector was highlighted; as never before, there have emerged in the region courses for editors covering aspects of editorial standards and quality in academic journals.

Quality and visibility achieved by Latin American journals, the great free and open access, has mostly resulted attractive for large foreign publishers, a phenomenon that has already been mentioned in the book by Alperin and Fischman, referred to above. Commercial publishers have established contracts including management, distribution and marketing of the best Latin American journals, taking advantage of national policies that encourage the "internationalization" of our publications. The result is that some Latin American journals that have entered the international market have changed their titles into English, have prioritized the publication of articles in that language and in some cases have changed from open access to closed access.

Along with its evolution, it has also warned of the process of uniformity among the publications of the region in terms of their editorial quality (Chavarro: 2015). However, challenges are noted when these lists of rules and practices need to be applied to journals that respond to different profiles and objectives, as is the case in many Latin American academic publications informative and cultural sections, which are often widely consulted in academia. Such is the case of journals specializing in art, film, literature, painting or music, which not always incorporate quality criteria that are generally better served by journals called *hard sciences* . Databases face difficulties in measuring the same standard to all types of publications without having to force their own selection policies, and this is mainly evident in databases or systems with multidisciplinary coverage with not only regional, but also international coverage.

Another criticism of these lists is to have more formal criteria of scientific quality (Rozemblum: 2015), which is particularly contradictory in databases which are sold as resources to validate scientific knowledge. The issue here has more to do with the appreciation we have of some databases, especially those that generate quantitative indicators and parameters that measure the impact of journals, authors and their contributions. The tendency to use these indicators as determinants in the process of science communication is difficult to reverse, especially because some international commercial databases usually offer their products with that approach. It is in this context that calls attention to quality lists which have more formal content criteria, but that are not necessarily out of place in the case of databases whose objective is more focused on reporting, which evaluated.

To integrate more qualitative aspects to this process, some databases are aided by scientific committees and experts, starting from the inspection of compliance with certain parameters, which add a qualitative assessment to exercises in selection. However, these committees can hardly replicate or

replace the determination of work content which are products of peer review prior to the application of a journal to any database.

Scientific quality or significant quality, such as Velterop (2016), is validated at a time prior to the application of a journal to a database. They reaffirm this idea explaining that scientific quality is obtained only through peer review and the requirement of originality in published papers (Rozemblum et. Al. 2015), which is part of the review process and acceptance of a manuscript. This implies that significant quality depends on the work of editors, editorial boards, reviewers or evaluators of the journal, for editorial management processes. It has to do with how to apply mechanisms that ensure that the documents are original; they bring new ideas to the discipline and are written following recognizable ethical conduct in academia. In any case, most databases confirm that the peer review exercises are complete and transparent, and that the requirement of originality is clearly stated in their policies. In some cases, it is requested that publishers provide documentation that proves that these processes are met.

That a database publishes thier selection criteria it is no longer sufficient for accreditation before scientific evaluative bodies, especially given the tendency to value more and more international databases that generate metrics from articles published in journals. Widely documented databases such as the *Web of Science* (WoS) and *Scopus* are used as sources *only* for the evaluation of science in our countries, even though the number of journals and articles generated in Latin America gathered in both systems represent a very small percentage. Much has been written on the subject, but it is enough to recall that in the case of WoS [4] it is often forgotten that its creator, Eugene Garfield, drove the project from a private for-profit company and not from an academic institution; that their employees are not scientists or researchers, but information professionals- like in any other database-, and that their scientific quality indicators also reflect problems and constraints that have been widely documented (Laborde: 2009).

On the other hand, the full adoption in Latin America of the open access (OA) movement for scientific research papers published in journals has served as an incentive to improve the quality of publications, but also makes them susceptible to heightened scrutiny by the mere fact of being free. The DOAJ- *Directory of Open Access Journals* (https: doaj.org), a database located in Europe, recently conducted a review and updated its criteria, "toughening" its requirements primarily to ensure better understanding and application

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4   Starting in October 2016, databases that integrate the Web of Science ceased to belong to Thomson Reuters, and is now owned by another company called Clarivate Analytics .

of the AA worldwide. This revision was made largely by the appearance of bad editorial practices that have tried to distort open access, resulting in the appearance of lists of journals and predatory publishers (https://scholarlyoa.com/) [5]. As a result, many journals that were collected by the DOAJ have been withdrawn by failing to meet the new demands, including several in Latin America.

Since then, the AA has long defined the current landscape of the Latin American journal, powered by a non - commercial model that is beneficial for the region, it is indispensable

that journals carefully observe the rules and good practices that are reliable to the communities they serve, and that their editorial processes are transparent. Although the vast majority of journals in Latin America do not charge authors for publishing, they have already identified some Latin American journals on Jeffrey Beall's list. That list focuses on journals that publish articles with questionable speed (less than three months), upon payment of the authors without clear review processes and arbitration. In addition, other shortcomings are detected: it is often difficult to identify who is the responsible editor; members of their editorial boards lack academic affiliations; there is little transparency to locate the country where the journal is published and in general, contact information is insufficient. Regarding editorial management, the focus closely on the opacity of their editorial processes and particularly on the fees charged to the authors, a situation that if exists should be clearly explained on the website of the journal. As for integrity issues, they bring to question the title of the journal which is inconsistent with its mission as they often have names with bombastic descriptions. They also warn about using emails such as spam to invite authors to publish in the journal or be part of the editorial bodies or reviewers, without demanding higher academic credentials. They also point out the poor quality of the magazine's websites, reflected in a large number of dead links, obvious grammatical errors, advertisements, as well as the lack of clear information on their open access policies. They also draw attention to the absence of international identifiers such as ISSN or DOI, or the lack of geographical diversity among authors who publish in journals.

CONCLUSIONS

The relationship between databases and publishers of scientific and scholarly journals dating back more than 150 years has cemented themselves

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5   The website where they could be consulted was closed on January 15, 2017.

as one of the most effective strategies to disseminate the contents of the journals among specialists, who are the main readers. The inclusion of a journal in a database remains a recognition of the quality of its contents.

In Latin America, given the scarcity of our academic publications in major international databases, information services were created within the region in order to disseminate their content, providing visibility and promoting standards, best practices and quality.

The consolidation of online publishing has transformed the way journals are managed and disseminated, so Latindex has updated its proposal for quality characteristics which contains 38 features, six of them mandatory, which consider regulatory criteria for fascicles and articles, as well as those aimed at verifying the quality of the content. It also includes good practices that affect the editorial management, examine the degree of exogeneity, verify the integrity of the processes of publication and certainly appreciate that journals incorporate the advantages of electronic publishing to enrich the access, retrieval and exchange of information.

The contribution of regional databases to the quality of journals has been recognized and there are studies documenting the improvement in the quality of the publications in Latin America. A certain degree of uniformity in compliance with quality features can be appreciated, and warns of the tendency to look more formally at criteria rather than content. At the same time it suggests that mechanisms exist that ensure the quality of scientific content correspond to the editorial process of journals , and that they must be fulfilled prior to their application to databases. Since open access has been widely adopted in the region, it warns about the risks of falling into practices that might be suspicious, particularly because of the lack of standardization or transparency in editorial processes as well as sloppy work in the production of journals.

Since open and free access has been the most widely published model adopted in Latin America, the journals of the region should avoid questions related to quality and transparency in its editorial processes, which add to the already difficult uphill battle they have to face throughout their existence.

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LEADERSHIP USING VIRTUAL SIMULATION

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— *Abstract*—

It is estimated that American companies spend approximately $14 million annually on leadership development. Although leadership skills provide a future competitive advantage, technology and engineering fields have concluded that technical skills are not enough to encourage companies to places of excellence. As a result, traditional methods of teaching leadership have benn shown poor results. The absence of effective leadership development at work and to not apply appropriate practices of leadership in the business environment are some of the major causes of failure. Charles J. Pellerin from NASA illustrates a great method to analyze and structure the behavior of individuals and teams called the 4-D system. In this paper we present how to use and improve the 4-D system, based on the experience with cases that reflect different business environments learning. This learning process take place through the use of virtual simulation system, where humans can represent avatars and thus dramatize real situations. In addition, these avatars can be combined with others of the same characteristics that reflect behaviors (almost human) using Artificial Intelligence (AI). This methodology enables engineers, technologists, and computer scientists develop leadership skills in a synthetic environment.

Keywords

Leadership skills are one of the traits necessary to succeed in professional life. Leadership can be acquired by experience (McCleskey, 20014, pp. 114-130). In a study conducted by the department of chemical engineering at the Universitat Rovira i Virgili in Tarragona, Spain, a conceptual framework that can be used to develop leadership skills, such as cooperation, interpersonal communication, and commitment to achieve objectives was introduced. The results of this framework also indicate that the effectiveness of student leadership was perceived as satisfactory (Özgen, 2013, pp.65-75). This study concludes that leadership can be taught at universities. However, technical courses are not enough to prepare engineering students and computer scientists for satisfactory performance in their future jobs. Engineering and computer science offers some skills that are solely based on techniques and this form of teaching is no longer sufficient for future work needs (Schuhmann, 2010, pp.61-69). This requirement to add more subjects to technology schools to incorporate techniques and thus empower students with leadership skills is in order to help them survive in the work environment. Because of the importance of leadership development, it has become an essential task for many organizations, such as the North American National Health Service (NHS) where leaders have the responsibility to become exceptional leaders (Jeavons, 2011, Pp. 24-25).

1.1 Leadership Development

In today's job market, leadership is considered one of the main factors in business management. This is fundamental to the existence of any organization. Therefore, this makes its development very essential in any industry (Laglera, *et al*., 2013, pp. 7-16). In a recent study, five hundred managers were surveyed and asked to rank the main concerns of the human resources department. Concern for leadership development was rated as the highest (Gurdjian, 2014, p. 211). One study has shown that 21st century engineers and technologists need leadership and management skills before graduating because of the importance of these skills (Özgen, 2013, pp. 65-75). In a study by Farr, engineering programs have shown that there is a lack of leadership development and management skills in their students. By obtaining these skills an engineer will connect with his co-workers, internal and external clients, and be able to adapt to the current demand of outsourcing and global competition. Companies committed to maintaining a competitive advantage are investing in the education of their engineers and technologists in order to direct teams and combine know-how with business knowledge (Farr, 2009, pp. 3-8).

One of the most important publications in the field of engineering education in the last 50 years is the Grinter Report. This document called for the strengthening of basic sciences and the inclusion of six engineering sciences (solid mechanics, fluid mechanics, thermodynamics, transfer and speed mechanisms, electrical theory, and material properties) for all engineering curricula. In addition, emphasis was placed on the inclusion of very important skills such as teamwork skills, communication skills, leadership, acceptance of diversity, and ethics and morals in curricula (Farr, 2009, pp. 3-8).

To study these leadership skills, a team from the University of Central Florida (UCF) studied the most important skills in this area. One of the instruments for doing this was a survey of two types of participants. The first group is engineers who worked in the field of leadership for many years and the other group is made up of students of engineering and technology. The study revealed that participants believe that team building / teamwork, personal development / continuous learning and communication skills are the most useful factors in a leadership position. In addition, the surveys helped to sort out the leadership characteristics that the participants considered to be the most important. Participants rated characteristics such as being honorable, credible and determined with the highest score, while the skills like being visionary were rated as the lowest score. The study also concluded that it is essential that all universities should develop an engineering leadership program to improve these skills such as the ability to control a group, critical thinking, how to be visionary and inspiring, a good communicator, and a creator of effective work networks. Finally, the study concluded that by obtaining the above skills, engineers and technologists may be able to handle the challenges of future engineering work (Crumpton-Young, 2010, pp. 10-21).

Engineering faculties have been putting a lot of effort into teaching students, both in the knowledge of theory and in the techniques required of engineers in the real world. Schuhmann believes, however, that the problem is that these types of skills and competencies are no longer sufficient for success. Many skills like communication, project management, and leadership are becoming more important than ever. When it comes to developing new products, there is a great demand for the ability of engineers to work and direct groups of people with diverse backgrounds and cultures. These areas include non-profit and government sectors. This responsibility will have a greater emphasis on postgraduate students (Schuhmann, 2010, pp.61-69). It is important that the next generation study leadership more than before. The demand for jobs has changed and puts pressure on the education system to make changes in order to keep up with market demand. This demand has been changing due to the traditional change of the structure of the companies. Companies are no longer operating in a region,

nor manufacture their products in one place. These days, the different parts of the product are designed in several countries. Afterwards, all parts are sent to a certain place in the world and are put together for the final product. Accounting and financing processes sometimes recommend that companies relocate their production lines to different countries to reduce labor costs. Many studies have recommended that there is a need to modify curricula for the purpose of creating leaders who can bring effective results to companies. In order to achieve this goal, an exceptional reform of education must take place (Kotnour et al., 2014, pp. 48-57).

1.2 Reasons for the failure of leadership development

The traditional method of leadership teaching is not providing great results. In the winter of 2014 McKinsey Quarterly report, one study pointed out that for years organizations have lost huge amounts of money in developing leadership to nurture new leaders. The cost of some leadership development programs can reach $ 150,000 per person (Gurdjian, 2014, p.121). With this huge investment in leadership development, 500 managers were surveyed to rank their main concern about human resources; Leadership development has been ranked as the highest priority (2014, p.121). As a result, the study identifies four reasons why there is a failure in a leadership development program. These reasons are as follows (2014, p.121) .

1. There is no correspondence between leadership skills and specific features to the context that occupies us.
2. Leadership development is not integrated with work.
3. Fear By researching the mental models of leaders and
4. There is no way to monitor the impact of improvements over time.

Therefore, using virtual simulation in leadership development will help overcome the second reason that makes the development of leadership fail.

1.3 Virtual simulation

The simulation process can represent the environment or the interaction (Putman, PG, 2013). Simulation can be defined as several activities in which the best solution to some problem can be found and identified. "The simulation game is a simplified experiential environment that contains sufficient plausibility or the illusion of reality, to include real-world responses, for those involved in the exercise." (Siewiorek, 2013, pp. 1012-1073). When it comes to using simulation in research, there are huge benefits. When simulation is used, the analytical approach becomes

simpler, in order to answer several research questions in any field of study with the purpose of elaborating an accurate conclusion. Without the use of simulations, researchers might not be able to answer research questions carefully, accurately, practically and morally (Cheng, A., *et al*., 2014, pp. 1091-1101).

Use of simulations and games began in the 1950s. Since then, the use of simulation has increased exponentially in education (Showanasai, P., 2013, pp. 71-91). The use of simulations in education is mainly to handle very important objectives, such as (Showanasai, P., 2013, pp. 71-91).

1. Improve the competencies for decision making.
2. Improve teamwork.
3. Encourage thinking and reflection skills.
4. Learn to use knowledge as a tool for problem solving.

There are some empirical studies that recommend simulation-based education as a great method that can help students understand (pp.71-91). When researchers were able to design an exact computer simulation, it made it more possible to create a form of virtual reality (pp.71-91). Therefore, well-designed simulation software has the potential to mimic any real scenario. Also simulation games can be used extensively in leadership training and other professional skills that require working environments (Siewiorek, A., *et al*., 2012, pp. 121-135). There are many advantages of using simulation in education. Some of these advantages are that students can live and feel the complexity of real-life scenarios. In current curricula at many universities, students will not have the opportunity to handle the complexity of real challenges. However, education that includes simulation would be able to introduce real challenges in the environment to students and make them face those challenges, both in individual and team settings. In addition, simulation in education helps students share the same experiences and offers opportunities to open discussions. Simulation encourages students to take risks and do more exploration for the sake of learning new ideas and techniques (Siewiorek, A., *et al*., 2012, pp. 121-135).

1.4 Use of Virtual Simulation in Leadership

Business leaders have realized the importance of virtual simulations in education. They have found that it helps to reduce the cost and time in the preparation of the future leaders without much complexity. In addition, virtual simulations can mimic real business operations and make workers interact with their leaders using remote communication. Companies such as Microsoft, Dell and General Electric have recognized the usefulness of these

practices. They recognize the benefits to help meet corporate goals (Conine, 2014, pp. 17-28).

2. METHODOLOGY

To carry out this study on leadership scenarios, we used simulation software and the 4-D system. The software used to perform the simulations uses a virtual environment consisting of avatars that communicate with other avatars. This software is known as Military Open Simulator Enterprise Strategy (MOSES). The 4-D system will be used to determine leadership types and measure the transformations that we can achieve.

2.1 Virtual World Development Platform (MOSES)

The MOSES project (Military Open Simulator Enterprise Strategy) is an exploratory effort designed to evaluate the open simulator's ability to provide independent and secure access to a virtual environment. "(MOSES Project) MOSES is controlled by the Simulation Technology Center training of the USA Army Research Lab. It is an open simulation source available to the public, for both industry and academic purposes. For the purpose of scripting in MOSES, the "Linden Scripting Language" (LSL) is normally used. LSL is a simple language that allows the user to connect the behavior to the object. According to (Brashears, A., *et al*.), "The text of the script is compiled into an executable byte code, just like Java. This byte code is re-executed inside a virtual machine in the simulator. Each script receives a portion of the total time of the simulator assigned to the scripts, so a simulator with many scripts would allow each script-individual less time instead of degrading their own performance. In addition, each script runs inside its own piece of memory, preventing scripts from scripting in the memory of the protected simulator or in other scripts, making it much more difficult for scripts to block the simulator".

2.2 How does NASA build teams?

Charles J. Pellerin has created the 4-D system based on his experience at NASA. As shown in the following figure, the 4-D system shows a classification of the four styles of leadership. These styles are represented by four colors: blue: representing the visionary, green: representing the cultivator, yellow: representing the inclusive and orange: representing the director / coordinator par excellence (Charles, PJ, 2009).

Figure 1. 4-D system

Pellerin described his contribution to the development of the "4-D system" leadership as follows (Charles, PJ, 2009):

- Emotional Dimension and Perception (Inclusion): It is based on the emotional experiences that come from relationships with other people. The color of the inclusive dimension is yellow.
- Logical and Intuitive Dimension (Vision): Encourage thinking about possible futures. Visionary leaders often create what they want. The dimension of the vision dimension is blue.
- Logical Dimension and Perception (Direction): This dimension is about taking actions and directing others. Some actions of this type of leadership are management, planning, organization, direction and control. The color of this dimension is orange
- Emotional and Intuitive Dimension (Cultivate): It recommends deep feelings and the achievement of a better world, and caring deeply for other people. The color of this dimension is green.

3. DISCUSSION AND CONCLUSIONS

The following is a case study in which the above is put into practice.

3.1 Case study: Simulation scenario for leadership development at Starbucks

On March 19, 2008 almost 6,000 Starbucks shareholders met at McCaw Hall in Seattle for a meeting annual. During that time, the CEO and founder of the company, Mr. Howard Schultz, appeared to the audience and was praised with loud applause. This great leader addressed them with an incredible and inspiring speech that included recognition of problems and the promise of a great investment. Part of his inspirational speech was "I humbly acknowledge and share both your concern and disappointment at the company's performance and how it has affected your Starbucks investment" (Starbucks Coffee Company, 2008). In this scenario, Mr. Schultz's leadership quality is critical, which is virtually simulated in all dimensions. All engineers who go through this virtual leadership development exercise feel in the real environment and can practice how to get to know other people who have to do leadership actions and listen to inspiring leadership speeches.

Figure 2: Starbucks Virtual Meeting Using Avatars

Figure 3: Starbucks Virtual Meeting Using Avatars .

Figure 4: Starbucks Virtual Meeting and 4-D System.

At the Starbucks meeting, Mr. Schultz unveiled six major changes in company strategies for leading the change towards an ever better future for it: Three strategies directly related to their coffee and espresso, two Starbucks-related strategies and relationships with their customers; and one about their customer rewards program (Starbucks Coffee Company, 2008). These strategies indicate leadership style. We can classify the leadership style based on these decisions in blue, green, yellow or orange by simulating these events, since as shown in figures 2, 3 and 4 attendees (students with avatars representing Starbucks executives) pass through all stages of the meeting and discuss important issues with regard to future strategies that were of concern to Starbucks. These strategy implementation discussions will help future engineering leaders to observe examples of real leadership. Also by performing different roles in the company, engineers can assess their leadership ability to lead a change in certain scenarios and make their audiences, employees and the general public happy, satisfied and confident to move on to the next achievement. The scenario replicates a virtual "Starbucks Company" board meeting and discusses different financial situations like

- Starbucks made a big profit
- Starbucks lost some market shares
- Starbucks lost a lot of market shares
- Starbucks had a big loss and management wants to file for bankruptcy
- Starbucks has normal operation

After creating a scenario, the student will be asked to study the proposed and current Starbucks scenario and will be asked to address the hearing and come up with various initiatives to address the current situation proposal.

After the student's speech (representing an executive role through the avatar), the public will ask several questions about how these initiatives could address the current status of Starbucks and give followers some kind of satisfactory expression of their investment. The leader will be judged based on treating both the situation and being able to convince the audience and their employees. Based on the actions of the leader, he speaks and addresses the questions of the audience; he is classified as a blue, green, yellow or orange leader based on Pellerin's leadership classification. This classification is taken from the actual treatment of the leader in a real live example. After the student completes their leadership role on the stage and records their leadership style, a leadership specialist will show the styles they lack. Afterwards, the engineer shows that people who have other leadership styles could decide on that specific scenario. This simulation gives students the opportunity to observe an example of a real-life case in a virtual world and therefore gives future engineers and technologists the opportunity to make some decisions based on the current situation and then identify their style of leadership, as well as the leadership styles they lack.

4. THE FUTURE OF OUR INVESTIGATION

 In the future every company should create a unique leadership program, and research could focus on choosing the best program for each company separately. Also the investigative work could focus on leadership programs on how to select the best program for a specific field of study. For example, in the article entitled "Effective Leadership Development in a Civil-Engineering Culture: Finding the Balance between Experience and Experiment", the author expressed the need to have a leadership program within the civil engineering profession to help companies establish their own internal program for the promotion of future generations of civil engineering for the study and practice of leadership, and become successful leaders (Kenner, 2004: 105-109).

Our future research focuses on the use of different technological methods in the development of leadership. Although simulation software can help in coaching the same, it was found that students focused less on financial goals and customer goals than the other styles. Thus, through the use of other techniques, researchers think that they are able to solve this problem more effectively and efficiently (Gurley, 2011, p.15).

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EARLY LITERACY. FIRST APPROACHES WITH THE CULTURE OF WRITING

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— *Abstract*—

This paper presents the results obtained by the early literacy workshop applied to children aged 2-3 years in daycare at the nursery school of the Universidad Autónoma de Chiapas (Tuxtla Gutierrez, Chiapas; Mexico) during 2015. The nursery school admits exclusively the sons of the students in bachelor programs.

The workshop was designed for the purpose of supporting children's first approaches to reading and writing through playful experiences, storytelling and the use of didactic materials specific to their school context. Likewise, it aims to indentify the factors that encourage early literacy, and the effects of the literacy mediators represented by the nursery school teachers.

This study was conducted following the participatory action research methodology for identifying the problem, analyzing the information obtained in interviews and non-action and action observations, and proposing strategies for the early literacy workshop.

Keywords

Childhood, play, literacy mediators, storytelling, didactic materials, nursery school.

Currently, being literate goes beyond deciphering a text, reproducing it in writing or performing basic arithmetic operations. It implies a long and complex sociocultural process that involves the development of different abilities to identify, interpret, understand, create and communicate texts with different purposes in different media (Braslasvky, 2003 and Ferreiro, 2008). It is indispensable for the exercise of citizenship, since UNESCO (2008) considers literacy as a basic principle of learning, since it is an individual right necessary in order to fully exercise the rights of health, education, work and culture.

Literacy is a socio-cultural, multimodal, multi-media, historical and dynamic process-but when and how did this process start?

Clemente and Ramírez (2008) point out that promoting children's approach to written culture from the first years of life has several advantages: improvement in oral language development in two-year-olds, experience in textual organization and construction of meanings, it stimulates their imagination and creativity and above all establishes a bond of affection more closely with the adults who accompany them in this initial process.

Therefore, literacy is closely linked to the individual, social and emotional development of girls and boys (Fundación Germán Sánchez Ruipérez, 2009). With reading, the child knows about himself and about the world around him, just as with playing (Vygotsky, 1996).

In this investigation, play was considered as a generator of significant experiences at the beginning of early literacy (Natale, 2014), based on the design of a workshop for children aged 2 and 3 who are cared for in the Nursery School of the UNACH, based in Tuxtla Gutierre [1]. The workshop combined play activities, oral narratives and the use of contextualized teaching materials with the purpose of bringing children in an affective and effective way to the written culture.

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1 In this daycare center, children of students in undergraduate classroom courses are the only children who attend. The center was created in 2012 in response to the school dropout rate on grounds of maternity and paternity.

READERS AND PRE-READERS

> *Once there was a duck who had her ducklings,*
> *And then the ugly duckling left ...*
> *And went to a farm, and then left ...*
>
> *Alexa, 2 years 7 months*

According to the National Reading Survey (CONACULTA, 2006) in Mexico, an average of 2.9 books per year are read. This survey measures the intensity, diversity, motivations and assessments that are read in Mexico from the age of 12.

From the samples that were obtained, ten reading profiles were determined from three criteria: diversity, frequency and purpose. These profiles range from less frequent reading and diversity (profile 1: little reader) to the one with the highest frequency and variety (profile 10: frequent reader of various publications). For each reader, profile sociodemographic variables, access to reading materials, assessment and readers records were analyzed [2] .

Table 1. Background of readers by reader profile

Reader pofiles	Their father always read them	Their mother always read to them	Their teachers always read to them
1	2.0%	2.0%	6.5%
2	2.5%	3.7%	6.7%
3	4.3%	4.5%	12.8%
4	9.7%	11.9%	10.6%
5	6.4%	7.8%	8.5%
6	10.1%	10.9%	22.2%
7	6.8%	12.6%	21.0%
8	6.7%	8.0%	8.8%
9	16.9%	12.1%	10.0%
10	13.6%	17.4%	12.4%
Total	**6.8%**	**8.2%**	**10.6%**

Source: National Reading Survey (CONACULTA, 2006)

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2   Readers answered background questions: When you were a child, did your father read?; Did your mother read to you? And did your teachers read to you?   Chapter 5 of the *National Reading Survey* (CONACULTA, 2006) shows the relationship between the taste for reading and paternal encouragement, for example a third of respondents who expressed that they enjoy reading responded that their father (31.3%) and mother (26.8%) always read to them (31.3%), while those who expressed that they liked to read little or did not like to read, stated that their father and mother never read them (39.2% and 38.2%, respectively).

As for the readers' background, it can be observed that there is a close relationship between the low reader profile and poor reading by parents (2%) and teachers (6.5%), whereas in the frequent reader profile of different publications, reading in childhood is higher (father 13.6%, mother 17.4% and teachers 12.4%, see table 1).

In addition, access to books in childhood is greater in frequent profiles, whether they were given away (12.4%) or had books at home (44.6%); While the little reader profile almost never received books (0.1%) and also lacked them at home (65.3%), see table 2.

Table 2. Availability of books by reader profile.

Reader profile	They were given books many times	They were given books sometimes	There were no books at home when I was a child	There were 1 to 49 books at home	There were 50 or more books at home
1	0.1%	5.4%	65.3%	12.1%	0.0%
2	1.1%	3.2%	50.2%	25.3%	3.6%
3	0.4%	6.9%	40.7%	30.3%	4.5%
4	3.2%	6.9%	36.2%	34.3%	5.1%
5	4.0%	9.3%	24.2%	37.4%	7.3%
6	7.1%	12.7%	28.5%	39.4%	8.3%
7	1.2%	23.0%	18.6%	49.0%	8.6%
8	7.1%	20.2%	13.1%	51.8%	5.2%
9	9.2%	22.2%	17.5%	34.8%	24.6%
10	12.4%	22.9%	21.7%	44.6%	16.9%
Total	**4.0%**	**11.8%**	**34.1%**	**34.6%**	**7.1%**

Source: National Reading Survey (CONACULTA, 2006)

These figures show how there is a correlation between taste or rejection of reading, and the intervention of parents and teachers to encourage reading during childhood.

According to Clemente and Ramírez (2008), facilitating direct and indirect contact with the written culture of children from the earliest years of life will make it possible to initiate the process of literacy, a long, unlimited and changing process both in its development and support of communication.

These previous experiences are subject to the reading abilities, disposition of time and emotions of the adult as a mediator of reading (Márquez, 1988), as well as the space in which they are developed. Therefore, in addition to promoting these approaches from the earliest years of life, it will be necessary to consider the techniques and materials appropriate to their age in order to be a pleasant activity, otherwise the opposite effect could occur: the early rejection of reading.

HOW DO I READ TO YOU? READING ALOUD IN THE CLASSROOM

The nursery school is located in Tuxtla Gutiérrez and was created in 2012 in response to the school dropout due to maternity and paternity in under-graduate students of on campus courses, as this was one of the main reasons why students decided to interrupt their studies . Annually it serves 65 children whose ages oscillate between 45 days to 3 years 11 months of age.

When children enter the room for the first time, they must go through an adaptation phase that lasts approximately 2 weeks, after which they are evaluated for the following developmental aspects (according to their age range): psychosocial , motor, cognitive and domain of language. At the end of each semester, the children evaluated in the four aspects of aforementioned development. If the child covers all evaluated aspects according to their age range, they switch to another classroom 3. There is also the possibility that they change because of the saturation of the groups, although it does not necessarily imply a pedagogical advance (Zúñiga, personal communication, March 26, 2015).

The activities carried out in each room are planned according to competency learning. This educational model emerged in the 1960s from the neoliberal economic model applied in developed countries. Since 2000, it has been applied as an educational model in Mexico and has been incorporated in all levels of the national education system, from preschool to higher. In the case of initial education, corresponding to the education provided in nursery and day care centers, it is to stimulate "selected development areas and dosed in precise times and spaces" (SEP, 2013: 61).

Among the activities scheduled for pre-school 2 and 3 are reading stories for 15 minutes from Monday to Friday, followed by 15 minutes of free activity. The following situations were identified during four non-participant observation sessions in the Preschool 2 group (children aged 2 years to 2 years 11 months):

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3   The groups in the nursery school are formed by age range, and are called "rooms". Three rooms belong to infants (45 days - 1 year) and three to toddlers (1 year - 3 years 11 months)

I. I.   The books selected by the teachers have thin sheets, or are pop-up; For this reason the books are kept out of reach of the children, since according to the statement by one of the teachers "they could break them". Thus the desire for the purpose of reading is interrupted and the possible "dual relationship with the book" is suspended (Barthes,2009: 45). It is important is to note that during childhood, tactile stimulation is fundamental because through this activity there is better psychosocial development (UNICEF, 1984).

II. They are constantly called to attention, for example: "Until you sit down, I will continue reading the story" "sit down and pay attention" "sit down and don't scream". So these interruptions cause children to lose interest in the story and in fact demonstrate greater restlessness. Then, the act of reading becomes an imperative, rigid and obligatory activity (Patte, 2011).

III. The teachers expressed weariness and boredom: "It's my turn to read? Why don't you do it?" "How much longer until it's over?" Such expressions connote valuation that teachers have about reading as a tedious and boring activity. The role of the adult is very significant as a mediator of reading, so it should be "sensible and generous ... It is often due to a form of reading by the teacher who is personally committed to the students... feeling genuinely interested in the discovery of the same work "(Patte, 2011:211).

IV. Sometimes the acting teacher prefers to tell the story according to what they know and not by reading the text. This happens especially when the texts are too long and the children appear restless, which is why they hastily read the story. In addition to the choice of text with respect to the length that is not appropriate for 2 year old children, the previously noted factors continue creating an atmosphere of tension and a lack of attention in the children, precisely because the teacher (mediator) does not demonstrate interest in this practice.

V. Regarding the group of Preschool 3 (children from 3 years old to 3 years 11 months of age) the observations of reading practice in the classroom took place during a workshop. In two sessions of the workshop books were brought with the topics of stories, history, and science in order to play Library. In these sessions it was

observed that the teachers were participative and demonstrated interest in the books that the students selected. The spoke with them regarding the illustrations and at times also narrated stories individually.

The situations described show how the role of the mediator is so significant during reading, since they are responsible for stimulating and encouraging reading habits (Márquez, 1988; Patte, 2011 and Petit, 2015). In the case of the children of Preschool 2 and 3, who are future readers, it is the teachers who take on the role of mediators of reading in the classroom.

In diagram 1 we can observe the characteristics of the mediators: reading ability, mood, value given to reading (boring, entertaining, tired, exciting, etc.), age, schooling and intention, intervention in rejection or attachment to reading by the children (initial readers).

Scheme 1. Effects on early readers derived from the skills and attitudes of reading
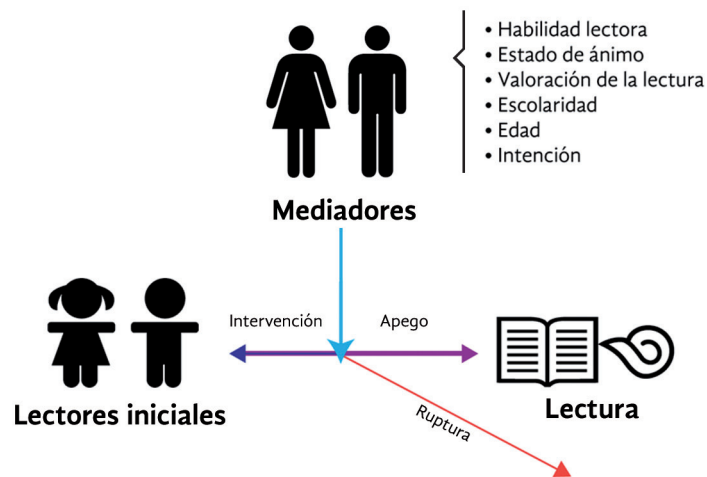
Source: Authors based on Márquez (1988), Patte (2011) and Clemente and Ramírez (2008).

LEARNING FROM THE GAME

I am the lion, I am not Matthew
Mateo, 3 years 2 months

From the earliest years of life, children begin to make their first explorations of the world around them through the senses. Smell, taste, touch, hearing and sight are the channels through which the child receives information and begins to develop their insertion into social life and their readiness for learning.

In fact, there are studies in neuroscience, such as the Philadelphia Study (Bhattacharjee, 2015) that shows how the experiences lived during childhood structure the way people think and act. This study found that children whose homes had at least ten books and their parents showed and spoke with affection, took time to answer their doubts and questions, read to them, taught them numbers and played with them, showed better skills in the use of language and a higher than average IQ.

This is why the environment in which we develop as children is so important. Space, both physical and social, links us and shapes us. It gives shape to who we are and what we will be in the future.

The child gives meaning to that space in which he is when he begins to understand. Understanding the world around him is thanks to his reading of it: "the reading of the world precedes the reading of the word, hence the subsequent reading of the word cannot dispense with the continuity of reading the word " (Freire 1981: 1).

From the age of 2 the child knows his surroundings through experimentation and play. He knows his world when he touches, tastes, smells, hears and observes. The pre-readings of his senses accompany the process of knowledge of the mother tongue, through which the child begins to know the signifiers and meanings of the world. During this stage, children observe the attitude of their parents and / or caregivers in the face of a given situation and imitate it, that is, they assume behaviors for their social referents, which initiate symbolic play.

For Huizinga (2007) and Brougere (2013) play is a cultural phenomenon through which the child experiences the process of socialization, since it is an activity that takes place in a delimited time and space, in an order determined by rules and in which the child interprets different cultural models. By means of play the child has the possibility to express himself either alone or in company through dialogues in which he experiences the diversity of combinations of language.

Bruner (1983) considers that language development and the ability to reason depends on the child's opportunities to play with language and thought. It is also the ideal practice with which it explores and recognizes

the elements of its environment, which is why prohibitions limit the ludic experience.

During the game, the child appears as something more than he usually is, be it a pirate, a prince or princess, or even a mother or father. This simulation seems real while playing. When the game ends everything returns to the point of departure. These expressions are the symbolic representations of culture, and their existence depends on "the individual (childs), age, gender and social status" (Brougere, 2013, p.5).

Early Literacy

According to Vigotsky (1996) cultural learning and education are not limited to the accumulation of knowledge. It involves the construction of ways of thinking. Language and education go hand in hand in the development of the identity of individuals and societies, and literacy serves as "the necessary foundation of all cultural activity" (Freire, 1981: 6).

Harris and Hodges explain that the term literacy is plural, because it refers to multiple skills: "reading, reading and writing levels, levels of comprehension, social and cultural functional dimensions, and extension of the term for new skills and a strategy of liberation in the capacity to read the world, as proposed by Paulo Freire "(cited by Braslavsky, 2003: 4).

Clemente and Ramirez (2008) mention that a promotion of reading in early ages may prepare the child to form prior ideas about reading and writing. These first direct and indirect contacts with the written culture as Sulby, Teale and Pressley define them as "emergent literacy" (cited by Clemente and Ramírez, 2008: 15). These initial experiences make it possible for the child to develop his oral language and his reading ability, emerging literacy has as its main axes:

> *The dialogical experiences about written and imagined books - that is, the guide of the adult to the child in a process of approach to the written material - and the narrative in its specific modality of the childhood, the story, is like a fundamental form of introduction to the world of writing (Clemente and Ramírez, 2008: 16).*

Through reading stories, the child can begin to establish communication relationships with the people around him, from being just an observer to being an active participatory explorer through dialogue. In addition to the approach to literature through the story, it will be necessary to bring her closer to other languages such as music and images, to encourage her to

express her emotions and begin to construct her own imaginaries (Zuluaga and Giraldo, 2012).

Literacy in children is a process that is intimately linked to their emotional, social and individual development, so being in contact with literature, music and images is a vital experience (Fundación Germán Sánchez Ruipérez, 2009).

From these principles, Natale (2014) explains that "emergent literacy" goes beyond the first contacts with written culture, since the child is also an active participant in experiencing for herself the proximity with multiple languages. Therefore we define this process as early literacy, which is understood as:

> *"The first stage of a long process of acquisition of written language, which takes place in early childhood from birth to eight years, which also includes a stage prior to entry into the formal education system. In this sense, the term includes all of the child's experiences with language, including oral, through songs, verses, stories and linguistic games.*
>
> *As far as written language is concerned, early literacy includes the child's first approach to printed materials in the environment, the books read to her and images that are shown to her, and the conversations she maintains with her parents or caregivers about these materials. It also represents her initial experimentations with writing instruments such as pencils, keyboards, and brushes, among others, to achieve mastery of the writing system that lets her read and write in a conventional and autonomous manner (Natale, 2014. Retrieved from: http : //dinle.eusal.es/searchword.php? Value = Literacy% 20temprana)*

It is through play that you can provide all of these vital experiences to children at an early age. In play, such as in reading, children create and inhabit imaginary worlds, reading from multiple sources (stories, music, images, objects) which provokes spontaneity, fascination and wonder in the little ones.

METHOD

Under the above scenario, a workshop was designed and implemented called *Magic Words*, whose main objective was that girls and boys of 2 and 3 years of age at the Nursery school of the UNACH succeed in establishing emotional ties to reading and writing by combining play activities, oral narratives and the use of contextualized teaching materials.

Participants

The Preschool 2 group was integrated by 11 girls and boys whose age range ranged from 2 years 1 month to 2 years 11 months, of which there were 6 girls and 5 boys. Almost all are single children, except for a newly admitted child who has a younger sibling (who was attending the Nursery school). Most have been in the school since 45 days of birth, or have been integrated before and have progressed from another room according to skill development.

In Preschool 2, most girls articulated phrases to express ideas or emotions, except one that uttered words unrelated by sentences. In the case of children, two of them articulated prayers to express ideas and emotions, the rest were just beginning to utter words.

In general, the children were very curious and receptive to the activities of the stay. In particular, girls were very sociable, while children were more reserved and kept away until they felt confident. As for the fine motor development of three children and a girl, it was difficult for them to take the crayon to draw. Most of the girls had developed this ability more.

In the case of Preschool 3, the group was made up of mostly children from Preschool 2 with the change of semester. Of the 12 children, 7 changed rooms, four were already in this group and only one girl was recently admitted. The ages of this group oscillated between the 2 years 7 months old and the 3 years 9 months old, and were made up of 7 girls and 5 boys.

Most of the children in the group expressed themselves with sentences to express ideas or emotions, except for two children who expressed themselves in isolated words, and one of them almost did not utter words because she communicated most of the time with sounds or pointing at objects. As for the development of their fine motor skills, three girls and two boys had developed this ability more. In general, both girls and boys were interested in reading stories. Two girls and one boy reported that their moms read them bedtime stories, one of them said she was going to buy books with her mom and another girl mentioned that she knew the library.

Techniques and instruments

The techniques used in the diagnostic step were the semi-structured interview and non-participating and participant observation. The data that was obtained allowed us to know in which way reading was developed in the rooms of Preschool 2 and 3, the types of books and / or materials used by the teachers, as well as the time allocated for this activity. It was possible to

recognize attitudes and emotions that children showed during this activity, as well as the skills and attitudes expressed by teachers.

In addition to the design of the workshop, the documentary review was carried out to determine which types of readings were most appropriate for the proposed purposes.

Workshop design

The objective of the workshop *Magic Words* was to design strategies for girls and children 2 and 3 years of age at the Nursery school of the UNACH in order to succeed in establishing emotional ties to reading and writing by combining recreational activities, oral narratives and the use of t contextualized teaching materials. In addition, there was the promotion of autonomy of children in the selection of their reading materials and beginning of writing, fostering the development of their creativity and expressivity by telling their own stories and encouraging rapprochement between children and adults who care for them thanks to reading and play (see diagram 2).

Scheme 2. The game as a generator of affective links of initial readers-writers and mediators towards reading-writing.
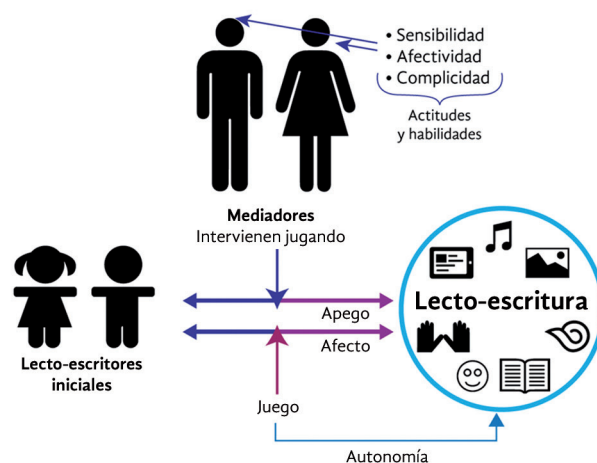
Source: Elaboration based on Bruner (1983), Vigotsky (1996) and Natale (2015).

For the design of the contextualized didactic material, Bruno Munari's (2004) design method was used which consists of a series of logically ordered operations that respond to a given need in a given context. Therefore,

the design of the didactic material responds to a relationship with the users of the same age (children of 2 and 3 years old), and to the space in which they are located (rooms of Preschool 2 and 3).

The illustrations that were made are of simple forms, with rounded strokes to give the feeling of smoothness or texture to simulate the stroke by hand or pencil strokes. The selection of typography was based on the research carried out by Walker and Reynolds (2005) on the use of typography and its effect on the reading process. According to these authors, the sans serif font with thick and uniform strokes is ideal for teaching reading to young children. The typographic families that were selected were:

1. Sans serif, by the thick, uniform and unadorned strokes. Vogue typeface and its roman variants and bold were used.
2. Script in graphic mode, since it mimics the stroke of letters by hand and is very similar to the strokes that children have when they start writing, the typeface 123Marker was selected.

The materials which were selected to make cards, badges, signs, etc., were: poster paper, cardboard and foamy because they are easy to acquire, have a very low cost, are simple to use and very practical for manual activities.

The purposes of these didactic materials were:

• Personalized with the name of each child on their material.
• That their name was legible, in large print, with a uniform thickness and stroke.
• That the children could familiarize themselves quickly with their use, in other words, that their function was easily recognizable.
• That the children felt good about the materials that they finished.
• That they promoted creativity by including them in the elaboration of the materials.
• Objects used for reading and playing.

The workshop was divided into three stages, in 18 sessions of 35 minutes twice a week for 4 months and 2 weeks [4] and 2 sessions lasting 40 minutes for the closing. These stages were adjusted to the school calendar of the

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4   The workshop was held during the months of April, May, August, September and two and in two weeks in October of 2015.

nursery school, which is on par with the beginning and end of the semester of the university.

The preliminary stage consisted of three sessions that involved readings in various approaches and modes of narration such as a song, the reading of dialogue and the reading of a story told by a cloth puppet. The purpose of this stage was to perform the diagnosis to identify children's attitudes during storytelling, as well as their fine motor skills.

Stage 1 was designed taking as a reference the learning of reading and writing from the teaching of proper names (Conafe, 2011 and Ferreiro, 2013), as it has a strong affective and positive meaning. The objective of this step was that children identify and write their name (supported by the writer) using educational materials (foamy figures, cards and paper figures) and linking the art activity with dialoged readings and dramatized stories. This stage lasted 3 weeks (6 sessions of 35 minutes) with the Preschool 2 group.

In stage 2 , the activities were assigned to Preschool group 3, the objective was for the children to identify in writing and begin to write "mom", "dad" and "house", as well as encouraging them to express new situations or stories from the oral narration of a story.

The techniques which were implemented were dialogue reading and dramatized reading. In addition the children interpreted characters from a fable using cardboard masks. This stage was structured in 4 weeks, with 8 sessions of 35 minutes.

Workshops for closing two 40-minute sessions were conducted. The first activity was asking children tell a story of their own creation from interaction with an object, a cloth puppet shaped like a monkey (see Table 1). In the second activity, storybooks of "The Very First" (*Los primerísimos*) collection by the *Fondo de Cultura Economica* were given out, and the children had the freedom to choose the book they liked, and then narrated the story to their classmates using the books' illustrations.

Table 1. Oral Narratives published in the book "The Adventures of the Little Monkey" (*Las aventuras de Monito*)

Participant (key)	Age	Title	Narration
Child (NA1M3)	2 years 7 months	The island	A monkey found a small house, and walked with his bicycle and his cart. And then he boarded the ship. And he was there, and left there and went there with his cart. And he went to the castle and in the water with the boat to his house and with a butterfly.

Child (N1M3) *	3 years	Amauri	Tree (He was asked "did he climb the tree?" What did he see in the tree?) Boat
Child (N2M3) *	3 years 5 months	The Monkey	It's on a boat (He was asked "Where is he going?") To the sea.(What did you find?) The sun.
Child (N4aM3) *	3 years 1 month	The little monkey	(Where was he?) On an island (what did he find?) A boat. (And then what happened?) The pirate took their bananas. (And then what he happened?) A princess was found, and along with the princess he shared his bananas.
Girl (NA2M3) *	3years 4 months	Trapped monkey	(What was the little monkey doing?) It was climbing up and found the sun. (And then what happened?) He caught the monkey with the sun and bananas too. And he also went on a pirate ship. And then he was trapped. (And could he free himself?) No, he is there, trapped.
Girl (NA3M3) *	2 years 9 months	The tree	A joke. He got to see the sun. The monkey hid in the tree. The monkey hid. (What did he find?) Treasure
Child (NA5aM3)	3 years 3 months	The little monkey	Once upon a time the Little Monkey found three balloons and a castle. Once upon a time the Little Monkey was at a party. He found a castle, he ran. (What did he find?) A princess and a prince, he went to the party. A library, a library, it is a library! There were books missing, many books. Look at my library!
Child (N5aM3) *	3 years 2 months	Matthew	(Where is the little monkey?) He is on a boat. (Where is he going?) To an island (what did he do?) Ran. (What did he find?) A donut.
Girl (NA7M3) *	2 years 9 months	The little monkey	Oh how beautiful! (What did the little monkey do?) He fell into the pond and went to sleep..

* In the case of the boys - N1M3, N2M3, N4aM3, N5aM3 and NA2M3- and the girls-NA3M3 and NA7M3 — it was necessary to ask some questions in order for the child to narrate what was happening to the character.

The final product of the workshop was a printed album entitled "The Adventures of the Little Monkey", which contains the stories told by the children and illustrated with their drawings, so that the children are presented as the authors of their stories. A copy was given to each participant as well as a multimedia book that included the workshop proceedings. The presentation of the book was done with the parents.[5]

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5   The presentation was held one month after the workshop ended in November of 2015.

Workshop results

The following were the results that were obtained according to the objectives set in the workshop *Magic words*:

1. It was identified that reading aloud provides a meaningful and emotional pathway between the children and the culture of writing, above all when the techniques of oral narration were implemented, such as: dialogic reading, dramatic reading or the use of puppets.

   Dramatized readings make it possible for children to pay attention during the reading and they were excited; it created a pleasant atmosphere and it was easier for them to get involved with the plot and recognize characters with different voice intonations. Using a puppet as a narrator also motivates their curiosity, however it was observed that children take longer to pay attention to the story as they preferred to be in physical contact with the puppet, and they gradually showed interest and enthusiasm in the story.

   Dialogic reading always has favorable results when the selected book has flashy and colorful illustrations, preferably covering the entire page. It was observed that children easily lost interest in books with few images and text. With dialogic reading it is essential that the visual part is rich in images.

2. The use of teaching materials that have been designed by taking as reference the school identity and context where the child develops also promotes the game of reading since the child goes from being a passive participant (only listening to the reading), to be an active subject by being part of the story with these materials and even being involved in their development. The object that the child constructs involves various dimensions:

   • Individual. It symbolizes their identity by having her name written on it as well as when she tries to write her name autonomously.
   • Communicative. It can be expressed through drawing and help develop their creativity.
   • Social. When they are prepared for someone else like their mother or a classmate, affective connections are made through the medium of the object.

3. The beginnings of writing are also stimulated, especially when techniques are used that permit artistic expression, such as drawing or painting with various media and tools, even using their own body to paint or write. It was observed that after having painted or colored, their hands were less tense and this facilitated and helped them in the tracing of the graphics of their name. Art favors the development of motor skills, since they have more control over their body and on the writing area.

Drawing in early childhood is crucial since it is the initial process of writing. For Vygotsky (1996: 33) "the little child draws first, then determines what they have drawn; in the next age the child gives a name to the drawing when it is half done and finally, she decides in advance what she will draw ". This complex process involves motor skills, language development and thinking.

4. When a child uses its own name from the beginning of reading and writing, the child identifies with it and is motivated, and their learning is significant. This also makes them feel even more confidence to start writing autonomously, which was observed in the last workshop sessions.

5. They began to familiarize themselves with the library and this gives them the opportunity to select their own reading materials.

6. During the closing of the workshop it was fomented that the children express and narrate their own stories, in order to stimulate their creativity and expression through the reading of their drawings. With this activity there were recognized as readers and writers.

7. One month after completion of the workshop, the presentation of the final products was done with the students and their parents. A printed book and an interactive digital book entitled "The Adventures of the Little Monkey" was delivered, which contained the stories narrated by the children during the close of the workshop. When making the delivery of the materials to the children it was observed that several of them showed affection for their books, hugging them and indicated to their parents that they had made them. One child narrated the same story that she had given the month before.

CONCLUSIONS

Literacy is a long and complex process involving sociocultural development of various skills to identify, interpret, understand, create and communicate verbally or in writing. It is indispensable for the exercising of citizenship, and therefore constitutes a vital right.

This process is modified throughout life, since it is historical and dynamic. It is possible to start from early childhood, since the early years of a human being are fundamental in shaping neuronal structures. In later years, the effects of the environment and people surrounding the child will be observable in their behavior, performance and in how they relate to the environment and people.

Both reading and play are two necessary activities that contribute to the development of thought and language in children. Hearing the narration of text allows the child to develop their vocabulary, learn the language structures and the relationship between the spoken and written, and above all, allows them to establish caring relationships with adults involved with them by lending their voice to the texts.

Play represents access to culture for the child, because thorough play they can mimic and experience relationships and roles of adults. It is an activity where they can express and relate to others, thus it represents a form socialization. Play is especially a fun and inexhaustible activity thanks to the child's imagination. This project was proposed to show reading and writing as playful practices for children 2 to 3 years of age, as a practical, affordable way in their school environment to begin the first steps towards literacy during childhood.

Offering texts in various formats and with age appropriate materials enables the enrichment of their experiences . Touching, observing and even biting these materials allowing them to begin to identify and relate orality to writing. They can also select texts that interest them or call their attention; possibly resorting again and again to the same text when it pleases them and begin to form a bond to the book.

Reading aloud is essential to initiate this process, because children are benefited with this practice in various ways. Oral language develops to expand their vocabulary and learn linguistic structures, thus their thinking will also begin to become structured, and to know and recognize signifiers and meanings.

Through reading children experience varying moods, surprise, joy, anger, sadness, fear, and love, therefore their sensitivity is enhanced. To achieve this, it was identified that dramatized reading techniques enables them to recognize the different characters and pay attention to the story,

using different voice intonations. Dialogic reading can also be used as a strategy, as long as the right material is taken with attractive illustrations and little text. In longer texts, the ideal is to use the dramatized reading.

Through reading, children feel closeness and affection for the adults around them (parents, caregivers and teachers), and they begin to communicate with them through dialogue. Therefore, adult participation is critical because they will be responsible for lending a voice to text to come alive in the imagination of children. Therefore the attitudes and values that adults place towards reading will influence the perception that the child has on it.

Both materials and the environment favor the diversity of readings and games, but it is especially adult participation as a mediator which is fundamental to the quality of reading and play.

The beginnings of writing are also stimulated, especially when artistic expression techniques are used such as drawing or painting with various media and tools, or even using their body to paint or write. This improves their motor skills, since they have more control over their body and writing space.

When their proper name is used at the start of reading and writing, the child feels a greater sense of identity, feels motivated, and their learning is significant. This also achieves a sense of greater confidence in order to begin to write autonomously.

Finally, it should be pointed out that the proposal in the workshop is presented as an opportunity to begin to open up the pathway in the historical, dynamic and complex reading-writing process.

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EVALUATION OF APICAL PERIODONTITIS IN TEETH WITH AND WITHOUT ENDODONTICS IN PATIENTS WITH DIABETES MELLITUS

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— *Abstract*—

The aim of this study was to study of apical periodontitis (AP) in patients with and without diabetes mellitus. In a retrospective cohort study, the record of 25 subjects with diabetes and 25 control subjects were examined. All participants underwent a full-mouth radiographic survey incorporating 14 digital periapical radiographs. The periapical region of all teeth, excluding third molars was assessed using the periapical index score. Apical periodontitis in at least one tooth was found in 96% of diabetic patients and in 68% of control subjects. Amongst diabetic patients 14.2 % of the teeth had AP, whereas in the control subjects 8.8 % of teeth were affected.

Keywords

Apical periodontitis, diabetes mellitus, Endodontics.

According to data from the Ministry of Health in Mexico, the prevalence of diseases due to lifestyle is high, such as diabetes mellitus. Of the total adult population in Mexico, 9.17% (95% CI 8.79% -9.54%) reported having a previous diagnosis of diabetes by a physician, equivalent to 6.4 million people. By sex, this percentage was 8.60% (IC 95% 8.00% - 9-20%) among males and 9.67% (IC 95% 9.13% - 10.22%) among females, equivalent to 2.84 million men and 3.56 million women. In the case of men, the entities with the highest proportion of individuals diagnosed with diabetes are the Federal District (12.7%), the State of Mexico (11.5%), and Veracruz (10.7%), while the women are located in Nuevo León (15.5%), Tamaulipas (12.8%), and the Federal District (11.9%) (Hernández-Ávila et al. 2013) (Figure 1).
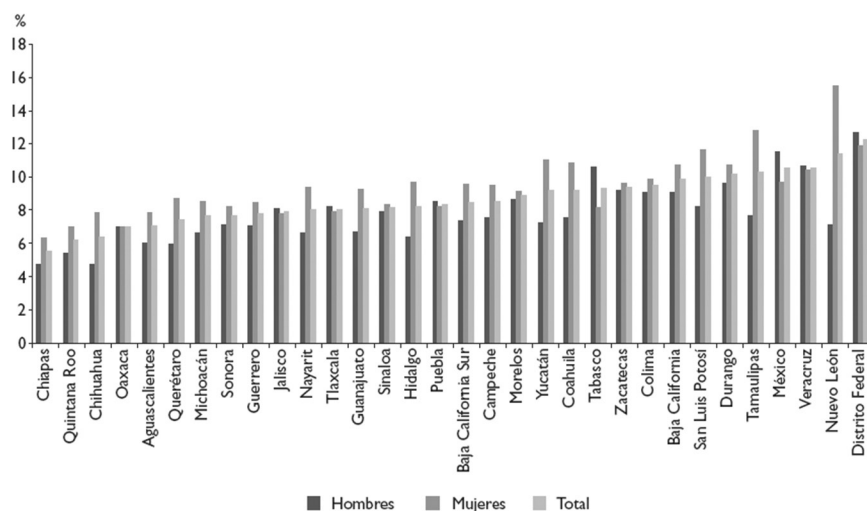
Diabetes mellitus is a syndrome characterized by abnormalities in the metabolism of carbohydrates, lipids and proteins, resulting in either partial or absolute insulin deficiency (type 1) or tissue resistance to its metabolic effects (type 2) (Vernillo 2003). Diabetes also affects the functions of the immune system and is associated with slow healing and affects the immune response (Delamaire, 1997). Oral manifestations of uncontrolled diabetes include xerostomia, infection, poor healing, increased incidence and severity of caries, candidiasis, gingivitis, periodontal disease, and burning mouth syndrome (Little, 1997). Aggressive periodontal disease has been linked to high serum glucose levels, especially when it has not been well controlled

(Soskolone & Klinger, 2001). Also a high incidence of loss of periodontal insertion has been described among diabetic patients (Thomson et al, 2004).

On the other hand, periradicular disease or apical periodontitis (AP) is a sequel to dental caries caused by an infection of the duct system. Periradicular lesions are the result of irritants of the polymicrobial infection of the duct system in teeth with necrotic pulpal tissue. Different epidemiological studies have shown a prevalence of periradicular disease in a range of 1.4% (Eriksen et al 1998) to 8% (Imfeld 1991) when using the dental organs as a unit. When patients or individuals are used as a unit, the prevalence may be higher at approximately 61.1% and increases with age (Figdor 2002, Jiménez-Pinzón et al 2004). In order to preserve the dental organs, the treatment of choice is the treatment of ducts. There is the biological basis that diabetes mellitus can affect the periapical immune response which causes a delay in the healing process. Because of this, a high prevalence of posttreatment disease could be expected in diabetic patients than in subjects without diabetes. However, the literature on the pathogenesis, progression and repair of endodontic pathologies in diabetic patients is remarkably scarce. Few studies have studied the possible association between diabetes and apical periodontitis ((Falk et al. 1989. Bender & Bender 2003, Britto et al. 2003, Fouad & Burleson 2003).

The aim of this study is to investigate the prevalence of apical periodontitis (AP) in teeth with and without root canal treatment in diabetic patients and control subjects without diabetes, as well as to evaluate the prevalence of apical periodontitis in patients with and without endodontic treatment in systemically healthy patients (control group) and those diagnosed with diabetes.

MATERIALS AND METHODOLOGY

In AP patients who sought odontology treatment in the Faculty of Dentistry and Public Health of the University of Sciences and Arts of Chiapas, 25 patients reported diabetes mellitus which was diagnosed by a rapid glucose test. 25 patients who did not report a history of diabetes served as a control group. The total of the sample was 50 individuals: 24 men (48%) and 26 women (52%). The scientific committee of the Faculty approved the study and all AP patients were given informed consent to participate in the study. Each AP patient was given a series of 14 digital dentoalveolar radiographs, which were taken using a radiovisiograph (Kodak Carestream® RVG 5100) and x-ray unit (Corix®) using the parallel planes technique with adjustments of 70 kV, 10 mA and a focal-film distance of 28 cm.

Of the radiographic series that was taken, all dental organs present except for the third molars were included in the study. The teeth were

classified as sealed if radiopaque material was observed in the ducts on the radiograph. The following information was recorded on the data sheet for each patient: a) number of teeth present, b) number and location of teeth without fillings (untreated teeth) that had identifiable periapical lesions, and c) number and location of teeth with sealed roots and those having identifiable periapical lesions. The periapical state was analyzed using the periapical index (Orstavik et al., 1986) (Table 1). Each category used in the periapical index (IAP) represents a step in the ordinal scale of the record of periapical inflammation. The worst result of all roots was taken into account for the IAP in multiradicular teeth.

Table 1. Periapical Index (Orstavik et al., 1986)

VALUE	CRITERIA
1	Normal periapical structures
2	Small changes in bone structure
3	Changes in bone structure with mineral loss
4	Periodontitis with a well-defined radiolucent zone
5	Severe periodontitis

X-rays were observed on an 18-inch computer monitor (Lenovo), by an observer with 10-years of experience. The IAP> 2 was considered a sign of periapical pathology. The periapical status of all teeth was assessed (Figure 2).

FigurE 2. Orstavik IAP
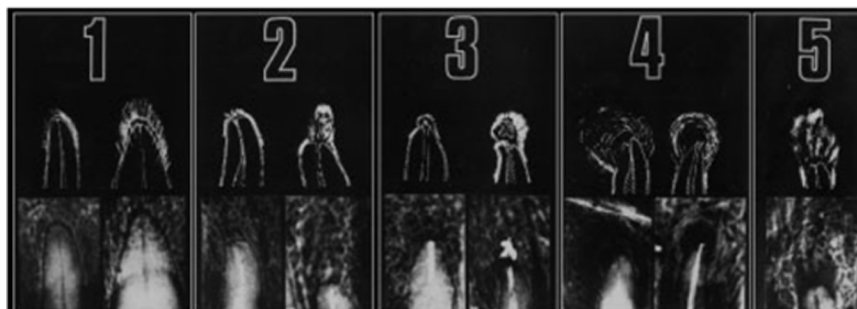
The data obtained were recorded in Excel® (Microsoft Corporation, Redmond, WA, USA).

RESULTS

The study group consisted of 25 patients, 10 men and 15 women, in an age range of 25 to 71 years old. The control group consisted of a number of 25 patients, 14 men and 11 women, ranging in age from 24 to 63 years old. The average number of teeth per patient was 18.8 for diabetic patients and 26.5 for the control group. Apical periodontitis affected at least one or more teeth in 24 diabetic patients (96%) and in 17 patients in the control group (68%) (Graph 1) (Table 2). The mean number of teeth with apical periodontitis was 2.68 in diabetic patients and 2.36 in the control group. One or more teeth with sealed roots were found in 52% (13) and 56% (14) of diabetic and control patients respectively. Among diabetic patients with sealed roots, 12 (92%) had apical periodontitis affecting at least one dental organ. In the control group with sealed roots, 11 (79%) had AP affecting at least one treated dental organ.

Graph 1. Prevalence of AP in diabetic patients vs control group.
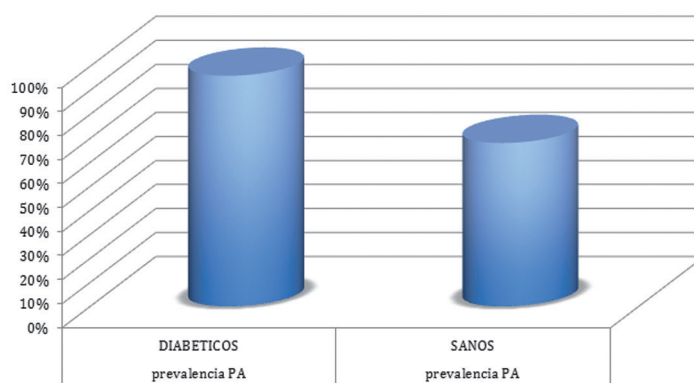

Table 2. Prevalence of Apical Periodontitis (AP), sealed dental organs (SDO), and sealed teeth with apical periodontitis (SDO-AP), in diabetic (n = 25) and control (n = 25) patients.

	PA (%)	ODO(%)	ODO-PA (%)
Diabetics	24 (96)	13 (52)	12 (92)
Control	17 (68)	14 (56)	11 (79)
Total	41 (82)	27 (54)	23 (85)

The total number of dental organs examined was 470 for the study group, of which 67 (14.2%) had apical periodontitis. In contrast, in the control group, 663 of the patients (59.8%) had AP. The number of sealed dental organs in the study group was 30 (6.38%) and 29 (4.37%) for the control group (Table 3) Among the diabetic patients, 17 dental organs (56%) presented BP, whereas in the control group 20 dental organs (68%) had AP. Finally, of dental organs without root canal treatment 50 (10.6%) and 39 (5.8%) were associated with AP in diabetic patients and in the control group respectively.

Table 3. Distribution of dental organs with AP, sealed dental organs (SDO), sealed dental organs with AP (SDOAP) and endodontically untreated dental organs with AP (EDUTAP)

	Total OD	PA	ODO	ODOPA	ODNTPA
Diabetics	470	67 (14.2)	30 (6.38)	17 (56)	50 (10.6)
Control	663	59 (8.8)	29 (4.37)	20 (68)	39 (5.8)
Total	1131	126 (11)	59 (5)	37 (62)	89 (8)

DISCUSSION OF RESULTS

Patients enrolled in this retrospective cohort study were adults who were seen for the first time in the Faculty of Dentistry and Public Health of UNICACH, Chiapas, Mexico. In relation to the gender of the patients, studies have been carried out which indicate that it does not affect the presence of AP or the frequency of root canal treatments (Orstavik et al 1986 , Jiménez Pinzón et al. 2004). Periapical radiographs have been used to evaluate the presence of AP. Previous studies have used periapical radiographs (Imfeld 1991, Kirkevang et al 2001, Boucher et al 2002, Britto et al 2003, Kirkevang et al. And Wenzel 2003). The apical periodontitis index (API) described to evaluate periapical radiographs was first described by Orstavik (Orstavik, 1986). This index has been used by other authors (Eriksen et al., 1998, Sidaravicius et al., 1999, Kirkevang et al 2001, Boucher et al 2002, Kirkevang and Wenzel 2003, Segura-Egea et al.). In order to perform the study, the third molars were excluded, teeth with defective or unrestored restorations were included, and treatments with poorly made ducts were included. On average, the total number of teeth was lower for diabetic patients than for the control group. These findings are consistent with numerous studies which convincingly demonstrate that uncontrolled diabetes mellitus is associated with the loss of more teeth due to the high incidence of caries and aggressive

periodontal disease (Little et al 1997, Katz 2001, Soskolone and Klinger 2001, Fouad 2003, Lagervall et al 2003, Vernillo 2003). On the other hand, another study found no difference between the number of teeth between diabetic and non-diabetic patients (Falk et al 1989).

The results of this study showed a high prevalence of AP, 96% compared to the control group. It is for this reason, as well as our results, that we can affirm that there is a relationship between diabetes mellitus and AP. In a previous study (Bender et al. 1963) Bender proposed that the cure of periapical lesions was unlikely to occur in patients with poorly controlled diabetes and despite the treatment of ducts, they increased in size.

Another study (Britto et al 2003) showed one or more teeth with AP (97%) in diabetic patients (96% in patients from this study and in 87% of patients in the control group (68% in the present study), with no statistical difference between these groups. However, the researchers discarded teeth with defective restorations or teeth without restorations, and teeth with inadequate root canal treatment. Because of this, their results do not reflect the actual periapical state of the compared groups, and therefore a definitive conclusion cannot be made. The total number of teeth with AP was 126, representing 11.1% of the total. The frequency of affected teeth with AP in diabetic patients was 14.2%, whereas in the control group it was 8.8%. Studies in animals have shown the relationship between diabetes and periodontitis. Diabetes was induced in rats using streptozocin (Koohaka et al. 1996). Diabetic rats developed severe inflammation of the periodontal ligament, radicular and bone resorption, compared to the control group. The percentages of patients who had at least one tooth with root canal treatment were 52% for diabetic patients and 56% for the control group. These percentages are low compared to other reports (Imfeld 1991, Sidaravicius et al., 1999). It was not the objective of this study, however it seems important to point out that diabetic patients had a greater number of absent dental organs which were extracted, either by caries, periodontal disease and periradicular periodontitis, taking into account that they have a higher prevalence of caries, periodontal disease and periradicular periodontitis.

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SPATIAL ANALYSIS OF ILLITERACY IN MUNICIPALITIES OF CHIAPAS

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— *Abstract—*

The purpose of this study is to analyze some determinants of spatial behavior of illiteracy in municipalities of Chiapas to 2010, considering a spatial regression model whose independent variables are: the proportion of speaking population of indigenous language, the percentage of people living in extreme poverty and current family income adjusted by Gross National income. The central hypothesis holds that municipal illiteracy rates are not distributed randomly, but present spatial patterns of concentration and dispersion. The results put on the table the importance of the availability of family income to enable the generation of writers basic literacy skills, as a key to improving school enrollment levels and reduce inequalities between indigenous and mestizo populations.

Keywords

Spatial heterogeneity, autoregressive models, direct and indirect effects, indigenous peoples, extreme poverty.

The objective of this study is to examine the main determinants of the spatial behavior of illiteracy in municipalities in Chiapas in 2010, considering independent variables such as the proportion of indigenous language-speaking population, percentage of the population living in extreme poverty, and municipal family income adjusted according to Gross National Income. The central hypothesis argues that illiteracy rates can be explained as a result of the combination of levels of poverty, indigenism and incomes present in the municipalities, and that these factors are not randomly distributed, but have patterns of concentration and spatial dispersion that strengthen their effects through the interaction between neighboring municipalities.

The importance of this research lies in three fundamental factors: (1) Chiapas is one of the states with the highest incidence of illiteracy in the entire country, according to 2010 census figures; (2) Chiapas is the second entity in the country in terms of the number of indigenous population and the first in indigenous monolingual population; (3) Chiapas is the entity with the highest proportion of the population in poverty and extreme poverty, since measurements began in Mexico in the 1990s, so the analysis of the spatial interaction of these factors results in an essential exercise to know the importance, magnitude and effects of illiteracy at the municipal level in terms of the variables and their spatial interaction.

DATA

The data used for this work were collected from demographic and socioeconomic sources dependent on the Mexican government and from international agencies. The first instance was the general census of population and housing 2010, which was compiled by the National Institute of Statistics, Geography and Informatics (INEGI, 2010), which compiled information on the total municipal population, indigenous population and illiterate population.

The data concerning literacy status were collected based on the guidelines established by INEGI, which defines illiteracy as the population of 15 years or older who declare that they do not know how to read or write a message. Under this criterion, individuals are classified as literate or illiterate. For the purpose of this work, the literate population will be the one who, if 15 years or older, declares that they can read and write a message. That is, they have acquired a basic capacity to access new knowledge, which makes it possible to improve their possibilities of social integration, wealth generation and access to health and education services.

Data on municipal extreme poverty levels were obtained from the estimates published by the National Evaluation Council (CONEVAL, 2014), which were carried out using data obtained from the socioeconomic conditions module of the National Survey of Income and Expenditure Of Households (ENIGH) for all municipalities in Chiapas. While municipal income estimates were obtained from the United Nations Development Program (UNDP, 2014) and are the standardized income component used to calculate the 2010 municipal human development index for the municipalities of Chiapas.

EXPLORATORY ANALYSIS OF SPATIAL DATA

The exploratory analysis of spatial data (AEDE) usually begins with the application of spatial autocorrelation tests to each of the variables involved, to which it is necessary to define an array of spatial contiguities (Chasco, 2003). The spatial contiguity matrix is defined as a binary matrix, whose values depend on whether or not the spatial units are neighbors, so the neighborhood criterion is fundamental. In this case it was considered that two spatial units were neighboring if the distance between their municipal seat was less than or equal to the maximum distance defined between all the municipal seats of the entity, and that two municipalities are neighbors if they are in a smaller or equal radius to 54.6 km away.

Table 1. Spatial autocorrelation, global Moran index.

Variable	Moran I statistic	Expectation	Variance
Analf	0.493	-0.009	0.001
Phlin	0.537	-0.009	0.001
Extremos	0.469	-0.009	0.001
lingreso	0.260	-0.009	0.001

Source: own elaboration with data of INEGI and CONEVAL

The statistical spatial correlation most commonly used is the Moran index in its global version measures autocorrelation based on the locations and the values of a variable x for all regions simultaneously, i.e., it is a measure of autocorrelation, defined similarly to the Pearson correlation coefficient (Anselin, 1995), with the provision that establishes the hypothesis that the analyzed variable is distributed randomly in space. When the p value of the statistic is significant, one can assume the presence of a pattern of spatial correlations. The global Moran index is estimated from:

$$I = \frac{n}{\sum_i \sum_j w_{ij}} \frac{\sum_i \sum_j w_{ij}(x_i - \bar{x})(x_j - \bar{x})}{\sum_i (x_i - \bar{x})^2}$$

Where W_{ij} represents the elements of the spatial weights matrix,   and, $\bar{x}$ the mean of the variable x. It is important to note that the autocorrelation coefficient measures the degree of association of the variable x with respect to their neighbors..

The Moran index in its local version allows the identification of spatial conglomerates in five categories: (1) low-low: spatial units with less than average value, surrounded by units with values below the average of the attribute of interest. These spatial units correspond to clusters called cold zones. (2) low-high: space units with below-average value surrounded by units with values above average. (3) high-low: space units with above-average value surrounded by units with values below average. (4) high-high: space units with above average value, surrounded by units with values above the average. These units correspond to conglomerates called hot zones. And (5) no data: the set of spatial units where the variable of interest is not significantly correlated with neighboring values (Cliff & Ord, 1981).

The results of the estimates concerning the global spatial correlation levels are presented in Table 1 and indicate the presence of high levels of positive spatial autocorrelation for all variables analyzed, indicating the existence of a direct association between municipalities with high levels of illiteracy surrounded by municipalities that in turn present levels of illiteracy above the state average. The same situation occurs in the case of the percentage of indigenous language-speaking populations, extreme poverty and income.

The presence of autocorrelation makes it possible to assume the existence of spatial structures capable of explaining municipal illiteracy levels in terms of possible associations with variables that in turn present high levels of spatial autocorrelation, especially when it occurs in the same regions or conglomerates (Getis & Ord, 1992), as was the case of the indigenous language-speaking population of the state of Chiapas.
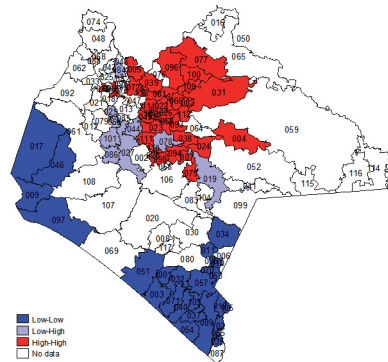
Illiterate Population

Literacy can be understood as a process through which individuals acquire the ability to communicate in written form, which constitutes an element that enables the continuous acquisition of abilities and skill of all kinds. Literacy empowers people to develop advantages that will eventually enable

them to improve their living conditions. The intrinsic relationship between the ability to read and write properly and the ability to acquire new skills plays an essential role in generating economic growth and reducing inequalities (UNESCO, 2008).

On the other hand, the lack of literacy skills is a key factor in explaining the serious shortcomings associated with extreme poverty, discrimination and social exclusion, in which specific social groups are involved, such as a large proportion of the population that speaks an indigenous language; A population that is presumably the lowest income in the state of Chiapas.

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Mapa 1: porcentaje de población analfabeta municipal, Chiapas 2010

Fuente: elaboración propia con datos del INEGI

Gráfica 1: índice de Moran de población analfabeta municipal, Chiapas 2010
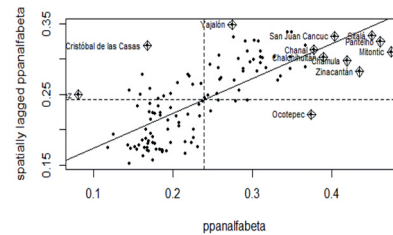
Fuente: elaboración propia

Map 1 shows the spatial dispersion of the municipal illiterate population of Chiapas in the year 2010, in the same map the presence of a hot conglomerate (in red) can be observed conformed by the municipalities with the lowest levels of literate population and that in turn are surrounded by municipalities with low levels of literacy. This conglomerate is formed by the municipalities of Simojovel, San Andrés Duraznal, Santiago el Pinar, Bochil and Larrainzar, among others (see map 1).-Municipalities that make up the conglomerate with high concentration of illiterate population in Chiapas.

The slope of the regression line observed in figure 1 represents the value of the Moran global spatial autocorrelation index for the proportion of municipal illiterate population, which shows an important level of positive autocorrelation (0.49), which implies that the proportion of the literate population is spatially concentrated. The graph of spatial association in quadrant I show an important grouping of municipalities that correspond to the red zones of the map 1.

The Indigenous Population in Chiapas

The indigenous population can be considered, from a historical and so-ciocultural perspective, as: "those direct descendants of the peoples who inhabited America since before the arrival of the Spaniards in the fifteenth century, who own a language and culture of their own and share forms of life and particular worldviews, differentiated from Western views "(Bello and Rangel, 2002: 40). In addition to the above, it is important to recognize the presence of large groups of indigenous people who have been culturally assimilated with mestizos with a consequential loss of language, who have also been displaced from their territories and now inhabit the poverty belts of large cities where the vast majority are a poor, marginalized population with no access to formal employment, education and health systems.

Although correct, the above definition is impractical due to the technical difficulties to implement its measurement, so it was decided to use the linguistic criterion established by INEGI, which defines as indigenous population those persons of five years of age or older who answered affirmatively to the question of if they spoke some indigenous language. In this way the indigenous population was identified based on the population census, using the linguistic criterion, which refers to the status of speaker. The indigenous language speaker population (ILSP) is made up of those individuals residing in Chiapas, five or more years of age, who claimed to speak some indigenous language in 2010.

Graph 2. Structure by age and sex of the population of Chiapas and the indigenous language-speaking population, Chiapas 2010
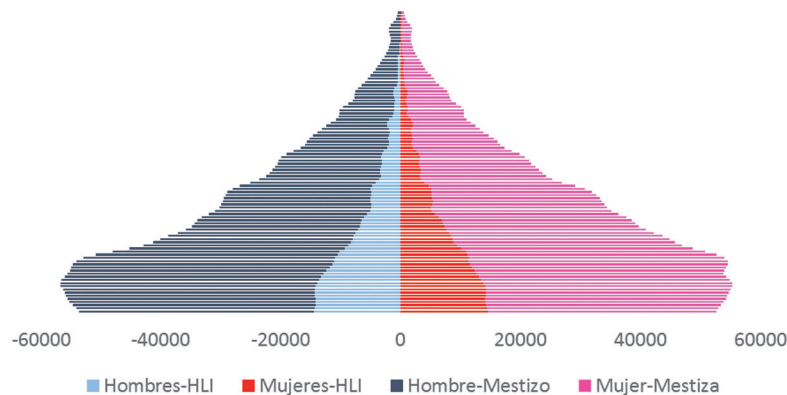

Source: own elaboration with data of census 2010, INEGI

The ilsp of Chiapas represented 23.5% of the total population of the state (see graph 2). Despite the fact that practically one of every four inhabitants can be considered part of the indigenous population, they are still considered a minority and therefore excluded from power and decision-making spaces (INEGI, 2010). Although in many cases, the indigenous population represents more than 60 percent of the population, in a municipality, the president and municipal authorities are usually of mestizo origin. Just over a million inhabitants of Chiapas speak some indigenous language. Of these, 66.2% speak Spanish, however, one third of the indigenous population is monolingual, which directly impacts their ability to access and successfully complete the different levels of the education system, which is reflected in the significant levels of illiteracy, which will reach 21% of the general population by 2010.

The spatial dispersion of the municipal indigenous population of Chiapas in 2010 can be seen in map 2, the same one where a is a hot conglomerate (red color) can be observed which is formed by the municipalities with the highest levels of indigenous population and that in turn are surrounded by municipalities with high levels of indigenous population. This conglomerate is located in the same area of the state in which the conglomerate of municipalities that presented high levels of concentration of illiterate population is found.

Mapa 2: municipios según condición de indigenismo, Chiapas 2010
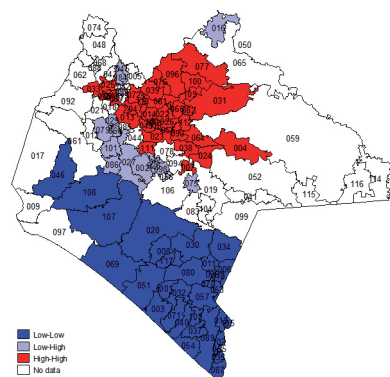
Fuente: elaboración propia con datos del INEGI

Gráfica 3: índice de Moran de población indígena municipal, Chiapas 2010
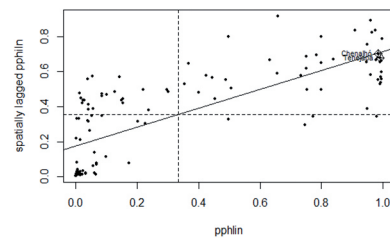
Fuente: elaboración propia

The slope of the regression line observed in Figure 3 represents the value of the global Moran index of spatial autocorrelation for the proportion of municipal indigenous population, which shows a significant level of positive autocorrelation (0.53), which implies that the proportion of Indigenous populations are spatially concentrated. Quadrant 1 of the graph of spatial

association shows an important grouping of municipalities that correspond to the red zone of Map 2.

Population in extreme poverty

The definition of population in poverty for Mexico was established by the National Council for the Evaluation of Social Development Policy (CONEVAL, 2014: 26), which states that individuals in multidimensional poverty are those who "... are not guaranteed the exercise of at least one of their rights for social development, and if their income is insufficient to acquire the goods and services they require to meet their needs." For measurement purposes, poverty is quantified in two dimensions: (1) Economic welfare, measured in terms of current income, and (2) Social rights, measured in terms of access to education, health, social security, food, housing and its services.

In addition, a person is in extreme poverty when he or she suffers from three or more deficiencies related to their social rights, and their income is below the minimum welfare line. That is, people living in extreme poverty have such low incomes that they cannot acquire the nutrients necessary to maintain a healthy life.

Mapa 3: municipios según distribución de población en pobreza extrema, Chiapas 2010
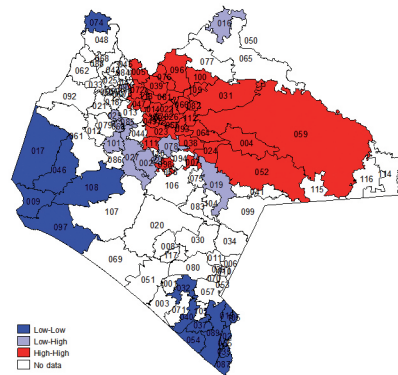
Fuente: elaboración propia con datos del INEGI

Gráfica 4: índice de Moran de población en pobreza extrema, Chiapas 2010
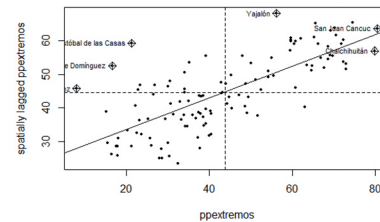
Fuente: elaboración propia

According to figures from CONEVAL in 2010, at the national level, the population in poverty was 52.1 million people, with 12.8 million of them in extreme poverty. Chiapas occupied the first place in percentage of population in poverty and in extreme poverty; 78.5% of the population of Chiapas was in poverty, of which 1.88 million were in extreme poverty, which represented 38.3% of the total population of the state. At the

municipal level, the lowest percentage of extreme poverty was 7.9% in Tuxtla Gutierrez and the highest was for San Juan Cancuc with 80.5%, one of the poorest municipalities in the country.

The dispersion of municipal poverty in Chiapas to 2010 can be seen in Map 3, which shows a clear concentration of levels of extreme poverty in the municipalities of the state where the largest proportion of illiterate population and two cold conglomerates - one around the municipality of Tapachula and another around the municipalities of Arriaga and Tonalá. It is important to consider that the slope of the regression line (graph 4), which represents the value of the overall Moran index for the proportion of the population in extreme municipal poverty, shows a significant positive autocorrelation level of 0.46, which implies that the proportion of the population in extreme poverty is spatially concentrated. Quadrant 1 of Figure 4 shows the importance of the municipalities of San Juan Cancuc, Chalchihuitán and Yajalón that correspond to the red areas of the map 3.
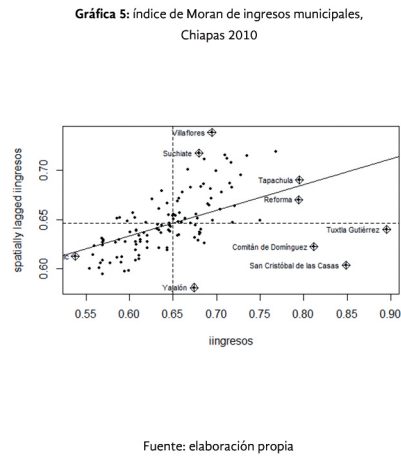
Municipal Income

In order to use a comparable and standardized measure of income at the municipal level, we used the income index, which is one of the three components that make up the Human Development Index (HDI) designed by the research office of the United Nations Program For Development (UNDP, 2014). The income index reflects the ability to access resources that allow individuals to enjoy a decent life. This represents an estimate of the current income available to families at the municipal level, and this is adjusted according to the Gross National Income (GNI). The calculation is based on the estimation of the current income available to families at the municipal level, which is adjusted to the INB from the System of National Accounts of INEGI. This is expressed annually in US dollars in 2010 (UNDP, 2014).

The dispersion of the municipal income in Chiapas in 2010 can be seen in map 4, which shows a clear concentration of high income levels in two areas of the coast, one that surrounds the municipality of Tapachula and the other around the Municipalities of Arriaga and Tonalá. On the other hand, the municipalities in the area of the state where the largest proportion of illiterate and indigenous population in Chiapas is concentrated are, in turn, a conglomerate with a low income concentration.

The slope of the regression line observed in Figure 5 represents the value of the Moran global spatial autocorrelation index for the municipal income index, which shows a significant level of positive autocorrelation (0.26), which implies that the proportion of the Illiterate population is spa-

tially concentrated. The graph of spatial association in quadrant IV presents some municipalities whose behavior is interesting, as is the case of Yajalón, an indigenous municipality, located in an area with high levels of extreme poverty and very low income that presents curiously high income levels , in relation to the average of its neighbors.

Mapa 4: municipios según índice de ingreso, Chiapas 2010

Fuente: elaboración propia con datos del INEGI

Gráfica 5: índice de Moran de ingresos municipales, Chiapas 2010

Fuente: elaboración propia
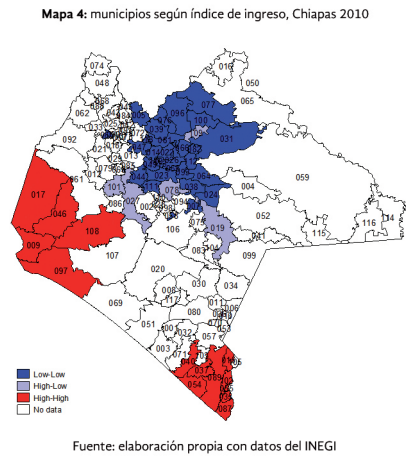
SPATIAL REGRESSION

The interaction between spatial units seeks to be captured from models which consider: (1) the endogenous relationship of the dependent variable (Wy) and spatial units; (2) exogenous relationship between the dependent variable (y) and the independent variables (Wx); and (3) the interaction between the error terms (Wu) (Elhorst, 2014: 8) In addition to the interactions, spatial models seek to capture the spatial heterogeneity via u which captures the effect of omitted variables. The saturated spatial regression model is given by:

$$y_{it} = \rho W y_{it} + X_{it}\beta + W X_{it}\theta + u_{it}$$

$$u_t = \lambda W u_t + \varepsilon_t$$

Wy denotes the effects of endogenous interaction of the spatial units, WX denotes the matrix effects of spatial exogenous interaction, Wu denotes interaction effects of the error terms with the spatial units, ρ represents the autoregressive spatial coefficient, θ and β are vectors of parameters to estimate and W is the spatial weights matrix.

From the saturated model of spatial regression, different models are derived: the autoregressive spatial model (SAR) when θ = o and λ = o, the spatial error model (ESR) when ρ = o and θ = o, the Durbin model (SDM) when λ = o; The Durbin Spatial Error Model (SDE); The spatial autoregressive spatial error (SAC) model when θ = o and the spatial autoregressive spatial model (SMA).

On the other hand, the model of ordinary regression (OLS) usually ignores the effects of spatial dependence and heterogeneity, that is, it adjusts under the assumption of independence between spatial units. When such assumptions are violated, biased and inconsistent estimates are usually produced, so it is advisable to use a spatial model, especially when there is evidence of the presence of dependence and / or spatial heterogeneity, which occurs frequently in cases where data are collected from space units taken from nearby units, which can show similar patterns.

Table 2. Linear regression model

Variable	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.169	0.088	1.922	0.057
Pphlin	0.061	0.016	3.832	0.000
ppextremos	0.003	0.001	5.264	0.000
iingreso	-0.101	0.110	-0.914	0.363
R-squared	0.780			

Source: own elaboration with data of INEGI and CONEVAL

A fundamental feature of spatial regression models is the simultaneous feedback that emerges from dependency interactions, that is, there are feedback effects between regions resulting from the exchange of stimuli provoked in a unit, by the action of a variable that generates changes in neighboring units, which in turn reverts to the original unit. In addition to the effects generated by the observed variables, spatial heterogeneity can come from latent (unobserved) influences related to cultural, economic, social factors, or a series of factors that can be explained through feedback among neighbors. This type of heterogeneity is captured by the dependent variable (Anselin, 1988; LeSage & Fischer, 2008) and must be treated in the sense that time series do, where dependency is managed through models that adjust the lag of the dependent variable (SMA).

Table 3. Lagrange multiplier test

Variable	Statistic	Parameter	p.value
LMerr	2.915	1	0.088
LMlag	11.152	1	0.001
RLMerr	0.004	1	0.950
RLMlag	8.241	1	0.004
SMA	11.126	2	0.004

Source: own elaboration with data of INEGI and CONEVAL

The traditional way of analyzing the validity of simple linear regression models is to review the sign and magnitude of the estimates. That is to say, that the meaning of the estimation of the estimated coefficients is theoretically correct. For example, to increase the average income of the municipalities, it is expected to reduce the levels of municipal illiteracy, or in the opposite direction, by increasing the levels of extreme poverty we would expect an increase in illiteracy levels (see Table 2).

As mentioned above, there is a wide variety of spatial regression models, so one of the crucial problems is choosing the right model (LeSage & Pace, 2009), which is why it is recommended to apply test to specify which one. There are two types of tests: model contrast and data adjustment.

Graph 6. selection of spatial model according to AIC criterion
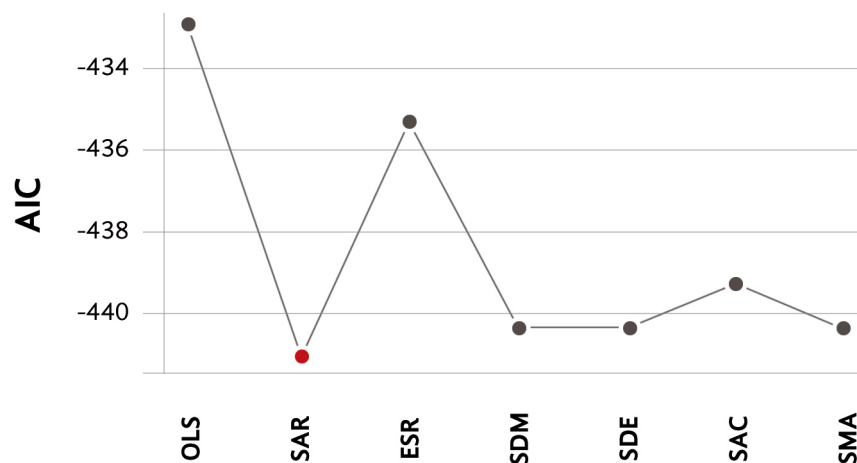
Most of the model fitting tests are devoted to verifying the existence of spatial correlation. We chose to use the Lagrange multiplier test. It compares the fit of the spatial model with the results from the ordinary linear regression model. The difference is used as a criterion to determine if the relative change of the first derivative of the likelihood function around the maximum affects significantly the autoregressive parameter of the Spatial model. The model with the highest value statistic must be chosen (see Table 3).

For the selection of the model, the Akaike information criterion (AIC) was used in addition to the Lagrange test, which provides a measure of the quality of fit of the model, depending on the data. Given a collection of models, AIC estimates the fit quality of each model and provides a means of selection, based on the value of the maximum likelihood function of the model and the number of estimated parameters. The model with the smallest AIC value should be chosen (see graph 6).

The construction of the spatial model for municipal illiteracy considered three essential elements: spatial heterogeneity among municipalities, spatial autocorrelation of illiteracy, and spatial autocorrelation of the factors that shape illiteracy levels. These elements are present in all six spatial models. As can be seen in Table 4, two spatial autocorrelation models were applied: the spatial lag SAR model, and the autoregressive spatial error model ESR; Two Durbin models: SDM and SDE; The SAC model and the SMA model to verify the existence of autoregressive effects on the errors.

Table 3 presents the results of the Lagrange test, in which it is observed that the model with the highest value is the SAR, however, the difference with the SDM and SMA model may not be large enough, which is why the AIC criterion was also used.

Table 4. AIC criteria for different models

Do not	Model	AIC
1	OLS	–433.00
2	SAR	–441.25
3	ESR	–435.32
4	SDM	–440.40
5	SDE	–440.09
6	SAC	–439.21
7	SMA	–440.07

Source: self-made

The AIC test confirmed that the model with the lowest AIC was SAR, followed by the SDM model and the SMA (see Table 4 and Graph 6). However, the difference with the SDM and SMA models is still small relative to the SAR model, so it was decided to apply the likelihood ratio test (see Table 5), where it is shown that the difference between models is significantly large and therefore the SAR model should be chosen. It is important to note that there is no likelihood test for the SMA model, however, it is clear that the SAR model is a better choice because it is a model with a higher level of parsimony, which presents a higher degree of adjustment of the data.

Table 5. anova test for SAR model vs SDM

Model	n	df	AIC	logLik	Test	L.Ratio	p.value
mod.sar	1	6	-441.253	226.626			
mod.sdm	2	9	-440.404	229.202	1 vs 2	5.151	0.161

Source: own elaboration with data of INEGI and CONEVAL

Another important point to note is that the SAR model adds to the traditional regression a vector of spatial lag that models the effects that municipal illiteracy exerts among its neighboring municipalities, in order to explain the inter-municipal variation. Intuitively, the model establishes how illiteracy levels in each municipality are related to the average illiteracy of its neighbors. The spatial lag vector Wy reflects the average illiteracy levels of the municipalities weighted through the matrix W, while the parameter $\rho = 0.3$ reflects the spatial dependence force, which is also statistically significant (see Table 6).

RESULTS

In order to properly interpret the model it is important to consider that the partial derivative of E (y) with respect to the kth explanatory variable has three fundamental properties: (1) the explanatory variable of spatial unit has an effect on the dependent variable known as effect direct; (2) the change over the dependent variable is not only a function of the kth explanatory variable, but also of the explanatory variables of the neighboring units, and (3) global indirect effects quantify the impact of a variable exogenous change in all neighboring spatial units given the value of the dependent variable (Griffith, 2000).

The adjusted SAR regression model is shown in Table 5. It is important to note that the estimated coefficients have the sign and magnitude expected

and that the R-square coefficient is higher than that presented by the ordinary linear regression model (see Tables 2 and 6).

Table 6. Spatial lag model SAR, illiterate population in Chiapas, 2010

Variable	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.176	0.082	2.136	0.033
Pphlin	0.037	0.016	2.273	0.023
pextrema	0.002	0.000	4.490	0.000
lingreso	-0.182	0.105	-1.738	0.082
Rho	0.304	0.089	3.433	0.000
R-squared	0.808			

Source: Based on data from INEGI and CONEVAL

The interpretation of the parameter β in the model space (SAR) expresses the impact of the change in the dependent variable xr on the town i as a combination of direct and indirect influences. This spatial spill originates from effect of the model variables, which basically depends on: (1) the position of the municipality in the territory, (2) the degree of connectivity between the municipalities, defined by the W matrix, (3) force estimated by the parameter ρ spatial dependence, and (4) the magnitude of β estimates coefficients (LeSage & Fischer, 2008; LeSage & Pace, 2009).

While the coefficient β expresses the change of an independent variable, which occurred in the cluster formed by the neighboring municipality i that coincides on the dependent variable of the municipality i, which emerges as a natural consequence of the spatial dependence. Any change in the characteristics of neighboring municipalities, in turn, generate changes that will impact the dynamics of the adjacent municipality i and vice versa. Since the impact of changes in an independent variable differs between regions, it is advisable to define a summary measure for each type of impact, and generally three types are identified: direct effects, indirect effects and total effects.

The direct effect provides a summary measure provoked throughout the state, by changing the variable xr in the municipality i . For example, if in the municipality i extreme poverty levels increase; the average direct effect quantifies their impact on levels of illiteracy in all municipalities in Chiapas. This measure takes into account feedback effects arising from changes in levels of extreme poverty observed in the municipality i, which impacts its neighbors through system modeling spatial dependencies through the matrix W.

Table 7. Effects in order of vicinity, model SAR

Neighbour	Direct	Indirect	Total
Pphlin	0.0370	0.0157	0.0528
Pextrema	0.0022	0.0009	0.0031
lingreso	–0.1835	–0.0777	–0.2613

Source: Based on data from INEGI and CONEVAL

The SAR model presented in Table 5, indicates that an increase of one percentage point in the proportion of indigenous population of a municipality, will cause an increase of 3.7 percentage points per levels of illiteracy in the state. In the same way it is interpreted as a direct effect of extreme poverty where the increase of one percentage point may be associated with an increase of 0.22 illiteracy points in the state; on the contrary, an increase of an average of one dollar per family income in a municipality would generate a reduction of 18.3 percentage points in illiteracy levels of the state.

The indirect effect is used to measure the impact of the increase of a dependent variable in all neighboring towns, which effects a given municipality i. In the case of SAR fixed effects model, Table 7 shows that the indirect effect of the increase of one percentage point in the proportion of average of speakers of indigenous language, in all of the municipalities in Chiapas, would cause an increase of 1.6 points percentage levels of illiteracy in the municipality i. In the case of extreme poverty, the indirect effects indicate that an increase of one percentage point in the same levels in neighboring municipalities would bring an increase of 0.09 illiteracy percentage points, i.e. ,the indirect effect of extreme poverty among neighboring municipalities only marginally affects the municipality i. When levels of extreme poverty are reduced in neighboring municipalities, illiteracy levels in the municipality i, improve marginally as an indirect effect.

The situation, in the case of municipal income in relation to indirect effect, indicates that when all neighboring municipalities improve their income, literacy levels of the municipality i improve by 7.7 as an indirect effect, whereas if only levels of income improve in the i municipality, literacy level increases by (direct effect) 18.3 points , so that the total effect is less than 26.1 points.

The total effect is the sum of direct and indirect effects, i.e., if all municipalities increase their income by one dollar, the overall effect would reflect, the average impact on levels of illiteracy in a given municipality and the overall effect will include both the impact of indirect and direct effect, which would be less than 26 percentage points.

The main changes in the behavior of municipal illiteracy levels are what can be observed between municipalities. That is, that the greatest inequalities can be found among municipalities that are relatively literate like Tuxtla Gutierrez, and illiterate towns like San Juan Cancuc, Chanal or Mitontic (see Figure 1). The SAR model shows the (direct and indirect) influence of the presence of indigenous peoples, extreme poverty and municipal revenues on the observed municipal levels of the illiterate population. The direct effect of all the variables represents on average 70 percent of the total effects, however, the income effect is essential in terms of direct and indirect impact on municipal levels of observed illiteracy. While poverty has a significant effect on levels of illiteracy, lack of income is the factor that actually modifies the pattern of illiteracy.

CONCLUSIONS

The main objective is to understand the role of spatial heterogeneity in determining levels of illiteracy in Chiapas municipalities. To meet this objective, a strategy based on a methodology of spatial regression, which also quantifies the total effects, direct effects and indirect effects of the determinants of illiteracy in the state. The role of average income in terms of current family income , standardized from Gross National Income, of the indigenous population and the effect of extreme poverty as a proxy for the inability of people to access services to enable them to acquire the minimum skills for literacy is highlighted.

The results showed the existence of a significant spatial pattern to explain the behavior of illiteracy in the territory of Chiapas. The SAR model showed the importance of family income as a key to predict the spatial behavior for determining the levels of illiteracy. The research results put on the table the importance of the availability of family income to enable the generation of the basic skills of reading and writing, as a key to improving levels of school enrollment and reduce inequalities between groups of indigenous people and mestizos. This work seriously questions the role of extreme poverty in a multidimensional way, where social deprivation are marginal to illiteracy, and where changes in levels of extreme poverty are spatially correlated with changes in the levels of municipal illiteracy, which effect is surprisingly low with only 0.2 percent increase in illiteracy per percentage point of extreme Municipal poverty.

The inverse relationship between increasing illiterates and reducing current family income is understandable as an effect on revenues is a factor that even surpasses extreme poverty. Which would mean that even in conditions of extreme poverty, the factor that explains high levels of illiteracy among municipalities is the lack of minimal income which leads

them to the status of illiteracy, which precludes the fundamental objective to combat poverty in the State which is to eliminate the intergenerational transmission of poverty through capacity building, where the minimum capacity expected to see increase would be the factor of reading-writing (Lopez and Nunez, 2016).

The relationship between illiteracy and the percentage of speakers of indigenous languages quantified the effect on the levels of illiteracy due to the changes in the ethnic composition of the population, which involves factors related to the physical accessibility and lack of nearby school in indigenous communities, but also factors related to cultural accessibility. The indigenous population does not have the possibilities of real access to the educational system due to social, cultural, and economic differences. In other words, although there is a school nearby, the indigenous population is confronted with barriers linked to language, discrimination, the lack of monetary income or the cost of opportunity- which is a situation that leads to greater levels of illiteracy among the indigenous population. This study makes evident these differences which are the product of non-random spatial distribution patterns.

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MODEL AR_ COMMUNITY HEALTH APPROACH BASED ON EDUCATION, THINKING, LANGUAGE AND SYMBOLISM

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— Abstract—

Talk about community health leads us to consider its structure and above all to the realities facing to make it possible as a mode of intervention of health systems. Social sciences provide theoretical-methodological elements of interest that allow support plans and programmes of intervention in health, as well as analyzing the scenarios upon which will perform their actions, waiting for success in promoting and prevention of health of populations. The Avila-Reyes model, is presented as a model inclusive of social elements that allow to visualize, analyze and consider social determinants of health that facilitate or not the development of cognitive processes that favour human health, from the individual to the collective. We analyze the symbolic interactionism, as positive a social approach to support the educational work within the field of health; even more so in countries with diverse geographical, social, cultural and development.

Keywords

Community health, symbolic interactionism, AR model.

It is necessary to start this document describing what we know as Primary Health Care (PHC) that can be defined from different perspectives and is considered an essential part of a health system. This importance is that it is the user's first contact with these services.

In this way we can understand the PHC as the essential health care accessible to all individuals and families in the community through means acceptable to them, with their participation and costs accessible to the community and the country. It is also the core of a country's health system and forms part of the overall socio-economic development of the community (WHO, 2016). The above is not a simple and uncomplicated scenario, but quite the opposite. Being the nucleus of the health system and being the user's first contact with health services, achieving this becomes a multifactorial, complex, dynamic and variant process.

It is multifactorial, because it cannot be represented by a simple linear equation like U + CS = HCS (user + care search = healthcare services). U, at all times will be determined by culture, religion, customs, education, gender, economic status, age, employment status, among others. Each and every one of these variables, which we will call determinant factors (DF), will be constructing the individual and structuring their perceptions and attitudes, cognitive elements that, to a certain extent, determine their practices. Here, CS is determined by the sum of all variables involved in the construction of the individual: $CS = \sum DF_{1-\alpha}$

Therefore, the attention of health services will be determined by CS + ($\Sigma DF_{1-\alpha}$)), and the user U, will in turn, influenced by the size of n and charged consistent proportional measure it ; therefore $HCS = (U * 100 / n) + (\Sigma DF_{1-\alpha})$.

The role of PHC is in the set of health care processes for both the individual and the collective. This thinking is considered by the WHO-UNICEF by Alma Ata (1978), where essential care, based on practical, scientifically grounded and socially acceptable methods and technology, was defined as a PHC and made available to individuals and families-The community, through its full participation, and at a cost that the community and the country can support in each and every one of the stages of its development, with a spirit of self-responsibility and self-determination.

Given the complexity of processes, the breadth of the concept and the nature of human populations, it is necessary to adapt to each region, country, community, from the essential principles of health care, as well as from the essential principles of respect for diversity and human rights, without ignoring the level of socio-economic development of peoples.

Specifically, its variability corresponds to considering that community health is an area of public health that has the goal of prevention, promotion

and education around the health of a population, working together health professionals and the community (Romero et al, 1979). In this regard, the areas of action proposed by the Ottawa Charter are: building healthy public policies, creating health-enhancing environments, developing personal skills, reinforcing community action, and reorienting health services (Secretaría de Salud, 2016).

In this way, community health guidelines are elaborated from various disciplinary approaches and cover aspects related to promotion and prevention, in relation to community psychology, sexual and reproductive health, health education and nutrition.

Based on the above, the following integral model is presented, including and directed to the strengthening of community health; Based on the importance of symbolic interactionism (Blumer, 1982) when considering that people act on objects and other people in their world from the meanings or symbols they represent.

Also, it is important to mention the contributions of Piaget (1983) and Vygotsky (1934) on the evolutionary development of human beings, specifically their contributions on thought and language, essential elements within the educational processes and complementary to the total understanding of symbolic interactionism in the understanding that the main contribution of the model lies in the strengthening of education as a basic element of community health.

AR MODEL

The Ávila-Reyes Model, hereinafter referred to as the AR Model, considers the determinants of community health, emphasizing that the participation of the population is crucial for the resolution of the health needs of its own community and the promoters are people trained health community to be a source of solving their own problems, organizing and strengthening its own development, becoming empowered.

As mentioned above, this model is based on education, specifically in its non-formal, continuous teaching-learning process, through which skills and abilities are developed, as well as in the servers, which allows them to perform better in their usual tasks and in the community itself.

The AR model takes as strategic binomial to the epidemiological surveillance and the promotion of health, favoring through symbolic interactionism, the adoption of healthy practices. We can explain it by considering that the theory of symbolic interactionism is based on principles such as: 1) human beings are endowed with the capacity for thought; 2) this capacity is modeled by social interaction; 3) in this interaction people learn the meanings and symbols that enable them to think; And (4) the ability to

modify or alter meanings based on the interpretation of the situation (Rose, 1962, Blumer, 1969, Manis and Metzel, 1978). In this paper, we consider symbolic interactionism as an element in favor of self-learning, which is a form of learning in which each person becomes their own teacher and acquires knowledge of self-interest (DRAE, 2014).

It is then that we recognize the potential of the aforementioned for the promotion of health, which is constituted as part of a political and social process, encompassing not only the actions to strengthen the abilities and capacities of individuals, but also, is aimed at changing the social, environmental and economic conditions of communities, with the objective of reducing or eradicating their negative impact on public and individual health.

On the other hand, epidemiological surveillance is a continuous and systematic process of collecting, analyzing and interpreting data on diseases or damages subject to mandatory notification in the country, to know its trend and evolution, to identify the geographical regions and the most populous groups aware of the current health status of the population, identify early outbreaks or epidemics for timely intervention and control, and finally, to evaluate the results of prevention and control measures carried out by the health sector (DGE, 2016). This is how we will be considering epidemiological surveillance as a systematized source of information that will continuously reach the various social actors involved in community health processes.

Figure 1. Model AR_ approach to community health based on education, thought, language and symbolism..
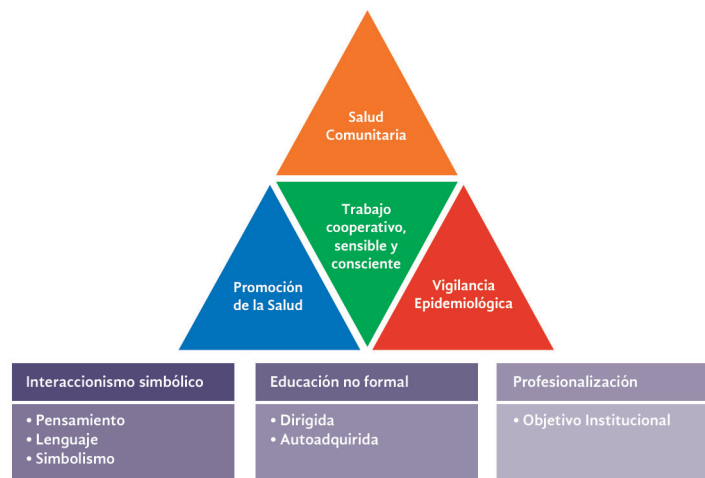
It is for this reason that the present AR model considers as a schematic and structural form the triangle, in which vertex is community health and the base , education, with its respective variants-self-education and training acquired or directed. The latter is an institutional objective, that is, the institutional responsibility to direct the processes, the optimization of resources and the impact on the health of the community (Figure 1).

The development of the general process, ie the dynamics of the AR model, is based on 1) individual growth awareness; 2) the awareness of being ethical and 3) the "defense" in the understanding that it is necessary to have sustained knowledge, updated and in accordance with the prevailing reality, to solve problems.

AR MODEL DYNAMICS

In Latin America, one of the main goals pursued by public policies has been the coverage of public services, without having determined prior quality or user satisfaction. This, together with the current globalized socioeconomic changes, has generated wide social gaps that accentuate the lack of economic and social equity. Without a doubt, one of the horizontal axes that guarantee the development of communities is education, but has been underserved in this region.

It is precisely because of the above that when talking about health, we are obliged to talk about educational deficiencies and it is in the PHC that the first consequences of educational deficiencies are presented, both in the general population and in health services.

The AR model considers education, thought, language and symbolism as the articulating elements that guarantee the processes for the achievement of community health, an assertion that we can make from the moment of analyzing the contributions of Blumer, Piaget and Vygotsky for the understanding of the cognitive processes that detonate in man his growth and development.

As we can see in figure 1, the bases of community health are health promotion and epidemiological surveillance and the social actors involved, community and health servers, are required to be immersed in continuous educational processes, training, self-education. That is, the learning favored by symbolic interactionism.

Health promotion within primary care has become an essential part of the practice of professionals working in health systems. It is an area in growth and development, whose limits are not yet defined and the theoretical-methodological support is still under construction. The promotion of health incorporates determinant social factors, which allow

people to control factors related not only to health, but to life itself; That is, it constitutes the basis of empowerment (Sarría and Villar, 2014).

The goal of health promotion specialists is to apply specific methods, skills and strategies to help people adopt healthy lifestyles, improve health services use, self-care and other healthy practices (Sarria and The Cross, 2014).

The AR model shows dynamism in each of its elements and in its entirety. That is, the general triangle can be dissolved into three specific triangles with its own dynamics and factorial interaction, and in one articulated by cooperative, sensitive and conscious work. At the same time, at the base, it can be explained through symbolic interactionism by its elements of thought, language and symbolism, as well as its direct influence on education and professionalization.

APPLICATION OF THE AR MODEL

First, when discussing the participation of epidemiological surveillance, we are considering a series of practices that allow the continuous monitoring of morbidity and mortality presented in communities. Although it is true that within a health system epidemiological surveillance is essential to anticipate needs and inform decision makers, it is also true that inter-institutional linkages have a strong impact on the prevention and control of health problems (Kuri, 2006).

This is where the importance of epidemiological surveillance within the AR model, based on all community health processes, is based on the updated information on the epidemiological profile of the communities. In this way, decisions can be made, not only in the area of public policies, but also in the execution of prevention tasks, specifically in the tasks related to the promotion of health.

In this way the promotion of health will take epidemiological references to direct actions consistent with the reality of the communities. Likewise, it is expected to have a sociocultural and demographic diagnosis that supports this information and allows planning and execution of health promotion programs related to the particular characteristics of the communities. All this is reflected as a potential for the development of prevention tasks in the field of public health.

Secondly, when talking about health promotion, we are referring to the mechanisms to provide people with the necessary means to improve their health and exercise greater control over themselves. The Otawa Charter (1986) specifies that in order to achieve the health, adequate physical, mental and social well-being of an individual or group, they must be able to

identify and fulfill their aspirations, meet their needs and change or adapt to the environment.

This conception makes it clear that health promotion does not exclusively concern the health sector, and also makes it clear that it needs various multi and interdisciplinary tools for the planning and implementation of its models, plans and programs aimed at community health.

It also makes clear that the training of health personnel requires this same multi-disciplinary and interdisciplinary scheme, resulting in the interaction of personnel trained in various areas, as well as the ongoing training of health personnel responsible for carrying out these processes of intervention in communities.

Finally, to recognize the strength of an educational base, based on the understanding of symbolic interactionism, is to affirm that cultural and social dimensions are intrinsic determinants of the learning process.

For this reason, we can focus on what Gonio and Llinares (1998) mention, although they apply it to the teaching of mathematics, it is also an analytical thought of cognitive processes. They mention that symbolic interactionism explains:

a. The complementarity between the analysis of the structure and the nature of the interactions, with the consideration of the structure of the educational contents.
b. And the balance between individual and collective approaches within the analysis of learning processes.

For its part, Sierpinska and Lerman (1986) mention that symbolic interactionism promotes a sociocultural vision on the sources and growth of knowledge, emphasizing the subjective construction of knowledge through interaction, assuming the basic assumption that cultural and social processes are part of the teaching-learning processes.

BY WAY OF SYNTHESIS

The complexity of the interactions between health and disease is clear, both in talking about individuals and in doing so for communities. This complexity requires comprehensive analysis and awareness of conditioning factors of diverse, geographical, cultural, political, economic, and cognitive origin, among many others. Thus, within health systems, and specifically, of community health, health promotion and disease prevention, a multi, inter and transdisciplinary work is required- Multi and interinstitutional and aware of diversity within populations.

In particular when talking about community health, one of the main challenges is to impact on the favorable determinants of health, to establish interactional synergies, to impact on the culture of peoples in the order of health care, to contribute to individual health education And collective, and of course, to achieve the positive impact of the actions of health systems, from the efficiency and effectiveness of their actions.

Thus, the AR model represents a contribution to the theoretical-methodological background in this field, through reflection on the scenarios and educational processes based on symbolic interactionism.

Finally, there are several studies that visualize symbolic interactionism as positive social approaches to a fundamental analysis within the health sphere and even more so in countries with geographic, social, cultural and developmental diversity (Parsons, 1982; Mummert, 1998; Castro, 2001).

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THEORETICAL REFLECTIONS
ON IDENTITY

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— Abstract—

This article is an effort to retrieve the theoretical contributions of diverse disciplines, schools of thought, and authors who used to think the problem of identity in the light of my research project. Firstly, I focus on the theoretical discussion on the *concept of identity*, to propose a theoretical stance in relation to it and set the limits within which it will be understood. Subsequently, raise analyze and build differs a reflection that allows between *personal identity and collective identities*, analyzing their points of encounter and distinctive features. Finally, I discuss with one collective identity which is relevant depending on the subjects of the research study: *ethnic identity*.

Keywords

Identity, Personal Identity, Collective Identities, Ethnic Identity.

Although the theory tends to be a generalization of the study of reality, the truth is not always useful to understand the characteristics and peculiarities of the various situations and phenomena that occur in life, the world and society.

Therefore, this article is an effort to regain the theoretical contributions of various disciplines, schools of thought and authors who think about the research problem that concerns me, namely the study and reflection on the transformations and reinterpretations in the identities of young indigenous students from the Intercultural University of Chiapas (UNICH) and its reflection as a basis for the development of research projects or interventions that are consolidated from building of a future or "forward or utopian imagination, envisioning the future, the what's to come" (Giménez, 2005i).

When working with UNICH students who call themselves and perceive themselves as indigenous, it is possible to observe that upon arrival at the university, a space which is inserted in a city where they have contact with multiple cultures, they begin to have changes in their behavior, to express themselves, to dress, to talk, to relate, etc. These changes are important to them because they wonder about the motives and meanings of the changes they are seeing in themselves and in the "others."

It seems interesting to learn how they transform in how they perceive themselves, define themselves, how the position themselves, (identities) are named and how these changes are observable from certain attitudes and behavior.

Problematizing this situation leads me to my research questions, which I am interested in knowing: What are the roots of these transformations? How are the changes experienced by youth?

Therefore, the intent of this article is to make a discussion about theory, trying to build bridges between the question about the change or reconfiguration that occurs in young indigenous identities and contributions from its generality and abstraction which allow us to understand study and learn a specific case study. This work in this regard will be an effort to build a seesaw between the theoretical aspects and their relationship to the social reality which is being studied.

To do this, Firstly, I focus on the theoretical discussion on the *concept of identity*, to propose a theoretical stance in relation to it and set the limits within which it will be understood. Subsequently, raise analyze and build differs a reflection that allows between *personal identity and collective identities*, analyzing their points of encounter and distinctive features. Finally, I discuss with one collective identity which is relevant depending on the subjects of the research study: *ethnic identity.*.

WHAT IS IDENTITY?

You were right, because the secret of human existence consists not only in living, but in finding the reason for living...

Fedor M. Dostoiesvky, 1878-80

Nowadays we can find as many definitions of identity as there are books on it. Therefore I do not wish to contribute more but take up the various contributions to locate theoretically there from where I am starting to study the resignifications of identity of UNICH youth.

Despite this situation, among the various authors we can find a general awareness or consensus on two points: first, polysemy and dispersal of the notion of identity (Dubar 2002, Giménez 2000, 2005i-ii, Valenzuela, 2000, Hall 1996); and, on the other hand, the dualist position that has deeply influenced the currents of its conceptualization (Dubar 2002, Hall 1999 Alcoff 1989, Riquer 1992).

It is important to explain in detail the dualism that has been characterized. On one side is the essentialist position, which basically refers to the conceptualization of identity as sameness, that which gives us the quality of identical (hence the name), as unchanging substance or shared and transmitted natural category, is the eidos (essence) of the people or groups, therefore something that is permanent and timeless. All of these are deeply rooted meanings in philosophical thought and in etymological origin of the word.

The other, more recent position, are defined as nominalism (Dubar 2002), constructivist approach (Hall 1996 and 1999, Gimenez 2000 and 2005i 2005ii, Castells 1999), positional definition (Alcoff1989), questions the identity such as A given category or as an attribute of classification of individuals and groups, posits that identity is subject to changes and transformations, refers to the ways in which we identify, the identity built from a specific action that is the process of identification, is built from ways to name or names that characterize our belongings from the stated positions that are assumed in the representation of an "I" or "we" finally refers to a borderline notion, contradictory, ambivalent or boundary between social-cultural and individual or subjective.

For many of these authors, the first position, or the essentialist, has been surpassed in conceptual terms, but its discursive and symbolic effectiveness is recognized in many social movements that have emerged or gained momentum at the present time and have supported an identity as a basis for mobilization and social cohesion[1] , based on one or a few attributes that are assumed identical, permanent or ahistorical, although the mobilization of these groups are based on historical processes colonization,

exclusion, discrimination, marginalization, abuse, negations, resistors, confrontations, etc. However, this situation does not upset the nominalist or constructivist stance, because the identity retaken as a flag, constructed from essential social movements, can be thought of as an assumed position for political action (Alcoff, 1989) or imaginary reunification which positions subjects as political actors (Hall, 1999).

In Chiapas, an ethical emblematic case of the use and appropriation of the essentialist position in the process of building representations that produce political actors was located and remains the armed movement of Zapatismo. In this case the imaginary reunification made sense since the identity of being Indian, erasing linguistic, cultural, religious, ideological, etc., diversity that existed between them.

This case is not only a must in terms of the importance it has gained in national and international space and transformations in various (political, social, economic, cultural) areas that have been enabled, but in the case of UNICH² sets a very important precedent for its creation. Within its grounds is the one that was designed as an institution to open a space for those indigenous young people who for decades had been excluded and ignored on this level, that is, discursively these young people are provided, having a multiplicity of highly complex stories, an essential identity: being indigenous.

But precisely my research is in the second theoretical perspective, since it is asked for by the critical points of difference, part of the questioning of what the educational model itself does not consider on subjective constructions which are actually being, in what have become part of the historical processes and context in which they develop, for what they want these young people to become.

> *In this second sense, cultural identity is a matter of "becoming" as well as "being". It belongs to both the future and the past. It is not something that already exists (...) these identities are subject to constant change (...) identities are the names we give to the different ways we are positioned,*

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1   It is very interesting, in this sense, the analysis done by Hall (1999) when studying the diaspora of the Caribbean as a cultural identity. It is important to note that he mentions the symbolic efficacy of the essentialist position to explain the diaspora as a fact of "imaginary reunification" that starts from the practices of representation (nominalist posture) of that group. For this reason it can be said that his analytical, epistemological and ontological position of identity starts from the constructivist proposal.

2   This can be found mentioned in the document explaining the foundations of the educational model of the nine intercultural universities that exist in our country (Casillas and Santini, 2006 and 2009). It is also worth noting that Chiapas was the second to be created in 2004 (Fábregas, 2008 and 2009), meaning that it was only ten years after the date of the Zapatista uprising.

and within ourselves, we have positioned ourselves through the narratives of the past. (Hall, 1999, p.134)

Within this definition can be identified some epistemological theoretical positions that guide the perspective under which the study of identities of young people in the UNICH are placed. My full proposal on the identity is summarized in Figure 1 and starts with various theoretical positions. Then I explain each one in detail features or elements that help me to clarify and explain the notion of identity relevant to this investigation.

Figure 1. Positioning theory on the notion of identity

Source: own preparation

The first element that emerges from the stance that I take for this work starts from their opposition to one of the central tenets of the essentialist view, namely identity is not static, but **mobile, dynamic, and transformed**. The identity does not represent an imaginary construction that is elaborated in a moment of the life of the subjects and that once constructed remains along the time, giving structure to the subject. By contrast, the central notion of experience is based on the fact that throughout the life of a person there are an endless number of events, among them those that are significant, they have enough symbolic force to generate changes and reorganizations in the individual subjective terrain. But these individual accommodations are always in direct relation to the interaction with the other ones, with intersubjective processes, which are also marking the experience of subjects.

(...) the experience. Concept from which one can articulate collective representations on humans that are sexually differentiated, with the way that these representations are experienced and interpreted by individual subjects in the light of the accumulated, decanted and converted experiences into social representations. (Riquer, 1992, p. 61)

Although in this case the author refers to the case of gender identity, particularly women, this statement is generalizable to any kind of identity we are studying. It is therefore possible to say that identity is transformed and changes throughout the life of people, according to new situations and events and experiences that integrate their experience.

From this position, the impossibility of joining the positions that have worked the transformative quality of identities as "*crisis*" is evident. From the point of view of social psychology, i.e., personal identity, the main representative of this position has been Erikson who in speaking of the notion of identity crisis argues that "(...) has its own *evolutionary period* before which one could not reach a crisis (...) This period of development is, of course, *adolescence and youth*, which also means that the identity crisis depends partly on *psychobiological* factors (...) ". (1972, p.12)

You can question this theory evolutionary postulates that pose a determinism in the development of human beings without considering that the notions of youth and adolescents are socially constructed, i.e. a young person is at the same time result or product of a specific social place and culturally it is assigned and not the result of biological and psychological development to which all people are predetermined (Burman[3] , 1994).

Moreover, the transformative quality of identity is associated in turn with three more aspects that define and orient my positioning, which are: is the product of a process (is constructed); it relates to the various positions that are allocated and that they are allocated to the subjects (positional); and the process of construction of meaning is linked to various groups and events that generate identification in subjects (it is multiple).

The first of these is the central foundation of the **constructivist** view that consolidates its opposition to the essentialist position, because although both recognize identity as an imaginary processing (see below), the second argues that this development is done once and it behaves as a distinctive feature, while the former suggests, according to Hall that "(...) instead of

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3   Even Burman (1994) works all his criticism in relation to the construction of childhood from the theories of development, his contributions are interesting to think in general to question all the stages that are part of the biological cycle of development to explain the change or the psychological evolution of people.

thinking about identity as a fait accompli, (...), we should think of identity as a" production " which is never complete but it is always in the process and is within the representation, and not outside it. " (1999, p. 131)

Hence the central idea that identity involves the implementation of a process, a process from which meaning is constructed. From this perspective it is also recognized that this process is reactivated indefinitely throughout the life of the subjects by the transformative quality of identities.

But that is a never completed process not only can be understood by the fact that identities are changing, then we would not escape a reductionist explanation rotating on its own axis. For Hall (1996) this situation is overcome if the explanation is based from the language, or rather, from a discursive stance.

> (...) the discursive approach sees identification as a construction, a never completed process: always in "process" (...) identification is ultimately conditional and is based on contingency. Once consolidated, it does not cancel the difference (...) identification is thus a joint process, a suture, one over determination and not a subsumption (Hall, 1996, p. 15).

In other words, we move within the scope of meaning and significance, from a a discourse posture, changing, contingent field because meanings slip. For example, Wittegenstein (1953) addresses the problem of constructing meaning from understanding from the process of language use. At the center of his proposal is the approach of indeterminacy of meaning by the existence of multiple "language games"[4], i.e., it is a performance and continuous updating, because "pronouncing a word is like touching a key in the plane of the imagination ". (Wittegenstein, 1953, p. 23)

For him, there is a slip of the senses because the use of language makes associations and interconnections between meanings, i.e., associative chains between meanings are indeterminate and endless and depend mainly on *language games* that come, but knowing how to play these games depends on experience, reason, passion, context, "training", socialization, etc. Lso shows that there is an intention in the act of speech, as an activity of people, depending on what you mean. This is because the meaning to him is not correspondence between the statement and the world, but the meaning is

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4   There are many ways in which Wittegenstein (1953: 25 and 39) explains and defines one of the main concepts of his theory. These notes in my opinion partially clarify their position: "(...) I will also call" the language game " to everything formed by language and the actions with which it is interwoven" There are innumerable genders: innumerable different types of employment of all that we call "signs", "words", "sentences". And this multiplicity is not something fixed, given once and for all; but new types of language, new language games, as we can say, are born and others age and forget ... The expression "language game" should emphasize here that speaking the language is part of an activity or a lifestyle".

the use, how the word is used in different social contexts and what intention you have to name it .

We learn words in a thousand ways (words are instruments that serve to act, just like prayers and signs) and their uses are different according to the "language games" that are developed. All games exist (e.g. language game to say hello, to offend, to teach, to build, etc.) and together form language. The meaning is given only by its use, i.e. it acquires a certain sense, not anything else, depending on the language game in which a word is used.

Returning to the issue of identity conceived in terms of significance, we can understand from the discursive position, because it has established itself as an always moving process, and that is constructed through **action**, represents an act.

> (...) "identity" is revealed to us only as something to be invented rather than discovered; As the target of an effort, "a goal", as something to build from scratch or choose from alternative offers and then fight for them to protect them afterwards with an even more fierce struggle ... (...) The fragility and forever provisional status of identidy can no longer hide. (Bauman, 2005,Pp. 40-41)

This position implies recognition of the identity of an *agency* by the subject, because identity is a choice, which is assumed[5] and is not carrying or having as an attribute or a previously established fixed category. This leads to the explanation of the second element that helps to understand the transformative quality of identities, i.e. the claim that identity is **positional and nominalist**, i.e., they are a political quality, in the case of the first , and discursive, in the second.

Starting from the nominalist quality for its continuity with what I have explained previously on the constructivist stance identity, as it is again supported from a discursive perspective, but from the recognition of positional quality.

The position or positions for Hall deal with the possibility of the enunciation of the subject, "(...) the identities are the names we give to the different ways we are positioned and within which we position ourselves, through the chronicles of the past ". (1999, p.134)

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5   It is important to note, as will be seen later, I'm not thinking about identity as a subjective quality of individuals and groups that is built on absolute freedom. In saying that it is a meaning assumed by the subjects, it cannot fail to be seen that this assumption often has to do with something that is imposed explicitly or implicitly, or that are attributed by others and assumed by the subject by have no other option, or they can be meanings that are assumed "for others", that is, as part of a social pact that makes membership possible, etc.

Definitely the names we use refer to current or present positions, which are always contingent, but in addition to its enunciation from the narratives of the past, I would add that they are also constituents the views or future projections, while from the narrative emerges "being", named from the past and history, and also makes the issue of "becoming"- in this sense we speak of the future, of projective identity.

The claim that identity is part of a discursive nominalist vision of subjectivity implies a specific position of the relationship between subject and language. I mean the place of language in the evolution of the subject as such, while as a power and position of subjectivity.

It is in and through language that man is constituted as subject; because language alone founds in reality, in its reality that is the one of the being, the concept of "ego". "Subjectivity" that we deal with here is the ability of the speaker to present himself as a "subject" (Benveniste, 1966, p. 180)

Presenting oneself as a subject implies the existence and recognition of the other, which makes clear that language, although its enactment can be individual (speech) -what is remitted subjectivity (Benveniste,1966), in his apprehension and enunciation only makes sense from the others. Whenever something is said, it is said to at least someone else (Wittegenstein, 1953)[6] . In addition, this enunciation is always generated from a context and a specific situation, which refers to what Foucault (1971) relates with great success in "The order of discourse", i.e. all those elements involved in the discursive production of a subject and that have to do with the different types of procedures of control of the speech, that is to say, the speeches are possible always within a pre-established order.

This subjective capacity of enunciation (nominalism) is related, but also differs from the positional quality. The position has to do with the discourse construction from a *position taken* by the subject, in this sense referring to a policy condition of identity (Alcoff, 1989, p. 14) that is consolidated from the possibility of acting, "The idea is that identity itself is taken (and defined) as a political starting point, as a motivation for action, and as an outline of personal politics. (...) identity is a position that is politically supreme ".

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6   The relationship between subject and language is much more complex than what I tightly expounded here. It is not possible for me to extend more, but it is a subject of an inexhaustible wealth - therefore, a subject in itself – that I left briefly punctualized. However, this is sufficient for the delimitation of the positioning that guides this work satisfying the purpose I pursue in these pages.

This concept is very important for building my notion of identity as it takes up the relationship between action and identity, two central elements that I am considering. I fully agree with the notion of "identity politics", assuming a particular identity (or activate it) makes sense as an orientation of the action, and therefore is strategic and arbitrary (Hall, 1999). For example, from the position of being UNICH students it is possible at times (if not all) that there results a strategic position of being indigenous (ethnic identity) in the process of use and appropriation of university space.

What does standing here mean? (...) The external situation determines the relative position of the person, just as the position of a pawn on a chessboard is considered safe or dangerous, powerful or weak, depending on its relationship with the other pieces. Essentialist definition of a woman makes her identity regardless of their external situation (...) the positional definition, on the other hand, makes her identity in an ever - changing context (...). (Alcoff, 1989, p. 14)

It is clear that the positional quality gives the subject the capacity for change and choice (agency) while recognizing that it depends on social conditions, i.e., the various positions that can be assumed to always be defined by the socio- historical conditions of its production.

Since these qualities of identity there is found a potential in the construction of meaning, which in the case of the study subjects of my research are generated the space of the university. This enables the students to discursively construct the meanings of their positions, the senses of their identities, and this is in turn triggers (after activation for the preparation of the meaning) action and production. The posture of identity in both action and political posturing is my interest, I think that young people are actors who (re) define and (re) position themselves in multiple areas, one of them has to do with his place as investigators or auditors of the social reality of which they are part, who study and in some cases are interested in transforming it.

This leads me to the last aspect that helps to understand the transformative qualities, namely identity is **multiple**, it has many facets, many faces, diverse, contradictory, ambivalent, hybrid and generates something new from the complex of its possibilities. In being the fruit of experience

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5   Es importante señalar, como se verá más adelante, que no estoy pensando en la identidad como una cualidad subjetiva de las personas y colectivos que se construye en una libertad absoluta. Al decir que se trata de un sentido asumido por los sujetos, no puede dejar de verse que esto que se asume muchas veces tiene que ver con algo que se nos impone explícita o implícitamente, o que son atribuidas por otros y asumidas por el sujeto por no tener otra opción, o pueden ser significados que se asumen «para los otros», es decir, como parte de un pacto social que posibilita la pertenencia, etc.

and movement, it combines endless elements that define and redefine continuously, especially since it is positional and depends on the positions that are assumed and the imprints of time and circumstances.

The concept accepts that identities are never unified and, in the times of late modernity, are increasingly fragmented and fractured; they never are singular, but built in multiple ways through speeches, practices and different positions, which are often crossed and antagonistic. They are subject to radical historicizing, and in a constant process of change and transformation. (Hal l, 199 6, p. 17)

The understanding of the relation between identity and action can only be developed from the theoretical currents that comprise the first as multiple representations that, on the one hand, increase and transform as the experience of the subject advances or modifies; And, on the other, when it is recognized that these representations produce action in function of contexts and situations.

This relates to the previous attribute in the sense that subjects never have one position; they are always different and sometimes contradictory. This can be explained by three more characteristics of the identities, characteristics that in this case define them as object of study.

The first is that the study of identity can only be understood and analyzed as a *cut at a* **specific time of life** of the subjects; it is a cut in the experience that refers to the past and glimpses the future or builds it from autobiographical narratives (Giménez, 2005 ii). When developing or glimpsing the future it is also a motor or movement, released actions of the subjects.

Recall, according to Hall (1999), which set out the assumed positions and which are built from the past and the future, but always refer to the present. They can only be studied at a time of life of the subjects, because they are constantly changing by movements of their meaning.

Because signification depends on the perpetual repositioning of its differential terms, meaning in a specific instance depends on the contingent and arbitrary stop: the necessary and temporary "rupture" in the infinite semiosis of language... This "cut" of identity, this positioning that makes the meaning possible, like natural and permanent "final" (...) (Hall, 1999, p. 138) .

In sum, in the narrative of the subjects appears identity as a significant unit, which is possible in that it both represents this "cut" delimited by positions, which is necessary and happens all the time, since in this way the subject is lead throughout their lives. The ability to define meaning and construct meaning does not mean that this remains crystallized and remain

over time. Therefore, when studying identities what we know are these "cuts" of significance that refer to the time of life of the subjects in which they are produced.

The second and third features are that identity is **situational (an emergency place) and contextual (historic- social)** , because it always is in direct relationship to a specific place of production and the historical moment when the emergency is possible . The ways in which a subject is identified are related directly (though not causal, as evidenced by the recognized diversity) with the place it emerges. In the case of my research at the UNICH , it is the space that matters in the construction process of meaning. On the other hand, identity is always produced from specific socio-historical conditions, which are those that characterize the current moment. For Dubar (2002, p. 24)

> *The subtraction of new forms of individuality is seen here as a result, neither voluntary nor programmed processes that modify the ways of identifying individuals as a result of major transformations in economic symbolic, and political organization and in social relations.*

This position is related to the recognition that the present time has a specific way of constructing subjectivity that allows us to talk about *contemporary hybrid identities* (Clifford, J. 1997), those that emerge and restructure the inevitable contact with "others" with the "different", the "strange", the "alien" , from which it appears just one of the positions of my notion of identity, *the difference as a condition in the process of constructing meaning* . Also, talking about the situational and contextual character of identity inevitably leads to the recognition that this cannot but be social in the sense that it is a product and producer; It is therefore a bordering notion. Let's look at each.

Identity makes sense from otherness, it is marked as **difference, it** is the Dialectic process of difference -equality that makes it possible and understandable.

> *(…) it is defined and stated in the difference. Between identity and otherness there is a relationship of reciprocal presupposition. Ego is only the definable opposition to* alter*, and the borders of a "we" are always delimited by reference to "them" to "others" to "strangers" to "foreign" (Giménez, 2005 i , p. 89-90) .*

It is a process of individual and collective construction which is based on a permanent basis to define and redefine the boundaries between the one and the other, it is the swing of the border between the different and the

"equal"; "(...) identities are constructed through difference, not outside it" . (Hall, 1996 , p.18)

Identities matter, I mean that they arouse interest and generate action or agency, whether they are in a situation of change, transformation or redefinition. They can only enter these processes when they are in conflict, which is what happens when they face a difference, otherness, otherness.

However, not only the difference matters, but it is a double operation, as mentioned by Dubar (2002, p. 11)

(...) the identity (...) [is] the result of an "identification" contingent. It is the result of a double language operation: differentiation and generalization. The first is the one that tends to define the difference, which affects the uniqueness of something or someone in relation to the others: identity is the difference. The second is the one that seeks to define the common link to a number of different other elements: identity is the sense of community. (...) what is unique is what is shared (...) two operations: the identification on the other .

Hence the paradox of identity, contradiction inherent in the notion, is constructed and is from otherness, diversity, the other, the different, even the antagonistic, what is "missing", but possible from the representations of equality, similarity, common . It is a paradoxical notion by its constitutive ambivalence of equal-different.

The second element, we might consider also paradoxical, of the notion of identity is related to a classical problem of social theory, namely: that of relations between society-individual-agency structure, etc. For Hall (1996) identity is a concept suture, a notion **boundary** which refers precisely to this link and synthesizes,[7] therefore it stands as a notion that can answer the question of how the symbolic sphere and the social sphere in the formation of the subject are articulated?

Use "identity" to refer to the meeting point, the point of suture between, on the one hand, the discourses and practices designed to "challenge us," tell us or put us in our place as social subjects of particular discourses and, secondly, processes which they produce subjectivities, which construct us as subjects capable of "having said" . (Hall, 1996, p. 20)

|In terms of the concept of identity and its characteristic ambivalence of same-different, it is important to locate that from the point of view of

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7   Esto se amplía en el siguiente apartado que se centra en la discusión de las diferencias e interrelaciones entre la identidad individual y colectiva.

psychoanalysis the identification process refers to the same, the process of recognition in the other, and an individual process; but the interesting thing about this proposal is that this subjective process that takes place in a subject takes place in a socio-cultural framework, which is what gives meaning and evidence to the difference.

> *(...) the concept of identity is at the border between individual consciousness (psychological) (...) and the field of social interaction- a field from which cultural products emerge that, over time, we consider as external and emerging realities outside of their producers (...) (Riquer, 1992, p. 52) .*

Thus, the identifications that subjects take up again in the process of enunciation of positions will always be related to moral codes, social norms, value judgments, aesthetic appreciation, etc. society and culture that are keeping links , in other words, feed and sustain social representations (Giménez, 2005 i) .

Thus, identity is a borderline concept between the personal and the social, "Identity is not substantive but relational; It is formed in a double process of self - identification and hetero-acknowledgement (...) ". (Valenzuela, 2000, p. 109), and also is a notion that is generated in tensions, relationships and interdependencies of the discursive and reflective and actions of the individual and collective subjects, hence many authors have explained their current boom.

So far I have described all the features and qualities of identity that define my position, but there is something important that needs to be said- what is identity in of itself. I consider that identity is a representation; it is one **imaginary construct** loaded with meaning and sense which changes constantly. The process of change of meaning (resignification) is discussed when an order of the representations is generated.

> *Identity is an imaginary that the individual or the group is building itself; to say it is an imaginary means recognizing that identity is not equivalent to being of the subject but a representation that the subject forms itself (...) . (Tostado, 1999, p. 294)*

Thinking in terms of representation puts us in the realm of the imaginary. Identity is an imaginary construct that is generated through the process of identifying and allowing the individual or group located or positioned from the multiple situations and conditions that produce it , is produced and sometimes produces .

Until now I have continually stated the difference between the individual and the collective without making any mention of their

characteristics and how they will be addressed in this work, which is why then in the following I will work on the debate between personal identity and collective identities and their joints .

LEVELS OF IDENTITY: FROM THE PERSONAL TO THE COLLECTIVE

In this section it is inevitable to enter into, albeit submitted by others, a very old discussion on the differentiation of the individual-personal and the collective-group-social. Durkheim himself (1938) criticized that some evolutionist's positions in which the study of cultural and social was limited to the study and understanding of the individual or individual consciences.

With this problem we face two aspects of the discussion distinctly. On the one hand, the recognition of these as forms and reality is different, we could say, that the ontological field of study or individual and the collective; and , on the other hand, the way they recognize, understand and understand the interrelationships between these levels or realities , and here we would located ourselves the areas of the epistemological and methodological .

In my opinion the first discussion has been overtaken by modern scientific and postmodern thought, because it is recognized that there are two different realities, and that each of them is capable of being studied [8] . Recognition of the social-group-collective as a distinct manifestation of the individual-personal has been appointed and affirmed long ago and from many perspectives- for this work I simply join the explanation of Durkheim to synthesize the posture:

> *(…) we must seek the explanation of social life in the very nature of society (…) the whole is not equal to the sum of its parts. It is somewhat different, and their properties differ from those of parts that comprises it(…) the company is not a simple sum of individuals, but the system formed by their association which represents a specific reality that has its own characters. (1938: pp.248-249)*

By this I start from the assumption that there are two different realities and the recognition of their existence can argue that identity is also manifested in these two levels of reality. We could then support the idea that there are two levels, but which actually operate in a closely interconnected way that they cannot be differentiated clearly enough to determine if any prevails over the other.

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8   The clearest evidence of this is the division of science and specialization and livelihood of the objects of study in disciplines such as psychology, social psychology, anthropology and sociology.

Speaking of personal identity, we are placing ourselves at a specific level, which has important analytical and methodological implications. When we recognize that people construct their personal identity from the distinction of others, we can recognize that this criterion of differentiation is performed as Giménez (2005) recognizes- retaking three sets of elements that allow their understanding and therefore can be resumed as an analytical approach to personal identities of youth, while allowing for the understanding for the choice of "life stories" as a methodological tool.

Investigations so far include three sets of elements: 1) belonging to a plurality of groups (classes, groups, networks and large communities); 2) the presence of a set of relational or idiosyncratic attributes; 3) a biographical narrative that tells the life story and social trajectory of the person being considered (Giménez, 2005: p. 22).

This accounts for the opportunity to learn and study this level of identity, but also realizes that the collective-social is constitutive of the individual, and as always built from it.

Culture involves planning, organization and attribution of meaning exerted on a reality which by itself has no order or means anything (...) management necessarily entails the setting of limits, of marks and differentiations (...) (Serret, 2000: p. 234-235).

In terms of the concept of identity and its characteristic ambivalence of same-different, it is important to locate the identification process that refers to the same thing, as an individual process; but the interesting thing is that this subjective process that develops in an individual takes place in a socio-cultural framework that is what gives meaning and shows the difference. In other words we cannot think about personal or individual without the social and relational context in which it is structured.

Speaking of the process through which meaning is constructed and the world is ordered to build personal identity from the same and different, we find that this construction is drawn from sharing some characteristics and differentiates from others, in other words, that which gives meaning to a subject to be defined as the same or similar to others means that an assumed position is always a shared identity, it is a social identity that "we" assume against " others".

(...) social belonging (...) implies the inclusion of an individual personality in a community to which a sense of loyalty is experienced. This inclusion is usually done by taking a role within the community (...) through the

appropriation and internalization at least in part of the symbolic-cultural complex that serves as the emblem of the community in question (Giménez, 2000: p. 52) .

Therefore, a personal identity, although unique in its shape or particular configuration [9] particular, always refers to the social identities that others assume ,in other words, the positions designated by a subject are social or collective identities which through their own experience are assumed as their own.

This point will be a central analytical axis in my investigation, because the first analysis of the identity of the intention is to recognize that feeling of social belonging, as a prerequisite to know where they can focus their research interests and actions of youth, and to analyze which elements have internalized the cultural symbolic complex or symbolic-cultural complexes in which they have been socialized and form part.

In short, we can resume the definition of collective identities of Gimenez (2000: . P 59-60) to explain this second level of reality.

(...) relational entities (...) consisting of individuals linked together by a common sense of belonging, which means, as we have seen, share a core of symbols and social representations and, therefore, a common orientation of action .

This reaffirms the theoretical positioning on the notion of identity that I mentioned above, and means that we are confronted with a notion that refers to equality that allows, from the psychological point of view, to build a sense of belonging, while the difference allows us to reaffirm the singularity as opposed to others. On the side of the social or anthropological, the characteristic of equality is what makes you stay with a certain identity in the shared collective imagination (although these imaginaries are permanently in reconfiguration, change or transformation), while its quality differentiation reaffirms us and "us" versus otherness.

Although the level of collective identities refers to the symbolic and imaginary condition of equality in groups or collectives, one should not think that this means that they have an effect on the subjects that have identical, uniform and standardized behaviors. Personal-individual level is not erased when the group-collective-social level is studied.

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9   When speaking of configuration, I mean the specific combination that identifies a subject, in other words, the particular way in which a subject assumes certain positions (social) as part of their personal identity.

The last point is of great interest to reflect on both ethnic and generational identities (youth) [10] , because one of the mistakes that often falls or has dropped out in the studies that have been developed on the subject, is to think that all subjects who participate in a given collective identity (of being young or being indigenous) necessarily have a set of essential attributes that characterizes them as a group or community. I think methodologically a bet of my job is to work the notion of identity from the complexity of the singular and the collective and mutual representations that are set in the actions of subjects, which are not exclusive and that point to the non - uniformity of subjects.

For everything said so far, we can say that the real problem then lies in the second discussion on the differences and relationships between the personal-individual and social-collective-group, since their interrelationships are so narrow, complex and multidimensional that there is no consensus that allows freedom from them.

Dubar (2002 : . p.14) in the first part of his book solves this dilemma by arguing that the opposition is meaningless from the nominalist - constructivist stance, assumed in this work, "(...) because any individual identification uses words, categories and references what are socially identifiable ".

In my opinion this is recognition of the inescapable relationships are held between these two levels, and this explains what kind of link exists between them, but does not avoid the question of the existence of these two elements. Relevance and need to separate them analytically is always based on the interests, objectives and research questions, on the one hand, and the positions of the researcher, on the other.

In short, and starting from these reflections, I can say that the positions taken for this work is that any collective identity finds expression in an individual identity and all personal or individual identity is supported from identification, i.e., in recognition of " wanting to be like others", recognizing that other people have more, in the equality for building the "we" that underlies the collective.

Finally, I should mention one aspect that I think is fundamental to continue thinking that not all collective identities have the same "status" or imaginary attributions in subjects. They are different in their process of conformation, thus each can be studied differently considering the socio-

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10   These two collective identities are presented on the following pages in more detail, so now I do not stop to make any further clarification.

cultural conditions and historical forming processes, so we can talk about different configurations of collective identities (See Figure 2) .

This marks the need for reflection on diversity within diversity, because collective identity is constructed from various references and organizes its meanings from various patterns and relationships with its environment and with reality.

This proposal (more analytical than descriptive) classification of collective or social identities, constructed from the distinctions made by Giménez (2005i: 53, referencing Merton, 1965) among community, group and imagined communities, and the analysis of gender identity constructed by Serret (2000) in his text.

We have, on the one hand, collective identities that I have named **" base ", " originating "** or **" primary "** that refer to symbolic aspects originating in the subject and are shaped by socio-historical conditions in which subjects develop and socialize. These are very important because every subject assumes them and they have a lot of symbolic and imaginary levels of subjectivity such as the social bond strength. Among them we can locate those that refer to the family background of subjects, where we can locate ethnic groups, and those that have a relationship with culturally biological meanings, among which are gender (male, female) and generation (childhood, youth, adulthood, old age) [11] .

Figure 2. «Configurations of Collective Identities»
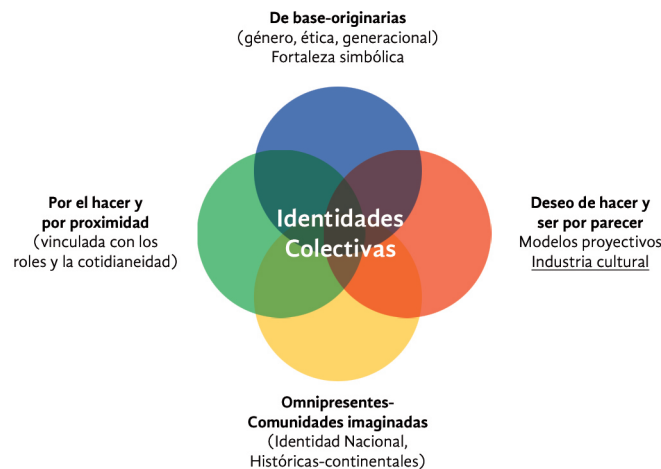
The second group is composed of those identities that are developed by **proximity**, and therefore are based on group relations, which presuppose a close, daily relationship, and considering groups as forms of organization and present acting social existence, (González, 1991 Radosh, 2000). Moreover, in this I consider also the significant social positions that are built from various activities performed in **daily life** as individuals form part of a society that are active in us and in which we operate in our daily lives , so they are closely linked to social roles, as in the case of student youth identity. Therefore, in these collective identities action (making subjects) , coexistence and daily close contact (proximity) are key elements in the construction process . The third group is made up of collective identities that conform to the maintenance, growth and expansion of the dominant socio-economic model and are based on the development of "ideal types" which are validated, hegemonic and homogeneous, which function as projective models that are part of the "cultural industry" (Horkheimer and Adorno 1944), and therefore diffuse through the mass media as in the case of student youth identity.

Therefore, in these collective identities action (making subjects) and coexistence and daily close (proximity) are key elements in the construction process. The third group is made up of collective identities that conform to the maintenance, growth and expansion of the dominant socio-economic model and are based on the development of "ideal types" validated, hegemonic and homogeneous, which function as projective models that are part the "cultural industry" (Horkheimer and Adorno 1944), therefore diffuse through the mass media.in these collective identities action (making subjects) and coexistence and daily close (proximity) are key elements in the construction process .

As far as I know young people, the first two groups are the most important, but the strong influences of the third group are equally appreciated, which often are what make them enter into conflict and confrontation.

Finally, in close connection with the above , we can find those defined as " **omnipresent** " (for lack of a better name) , which relate to the concept of Anderson in Imagined Communities and has served to explain national identities that are little significant in the daily lives of people, but reactivated depending on the context of social mobilization (migration) , in some struggles or social movements within nation states themselves and generally ubiquitous presence of other identities . In this group I also included which I have called historical continentals, which refer to the identity that gives belonging to a particular continent and that operates and are constructed similarly to national identities, but has historically divided the globe not

only under a geographic-spatial category, but also racial category and cultural, scientific and economic domination.

3. "SIGNIFICANT" IDENTITY POSITIONS

In this section I want to build my position around a collective identity that has been widely studied and, as in most cases, given the existing various theoretical arguments to explain it, namely the *ethnic identity*.

This identity is definitely not the only and perhaps not the most important factor in the identity configuration of college students, however, it is a position of personal identity that I want to develop ,because my research questions as well as my first approaches to the reality that I studied are based on the questioning of the identification processes that develop and are reconfigured in youth from interethnic or intercultural contact that are generated in the subject by the fact of living in San Cristobal de las Casas and for studying in the UNICH .

Also, because I discuss the often idealized visions of indigenous groups in Mexico that which have described "being Indian" under a romantic vision and always referred to ancestral traditions and customs that culturally characterize them[12] , it is important to separate myself from these positions .

Ethnic identity

(...) are just products of our imaginary activity, imaginary parcels of the real, which are historically constructed.

Daniel Mato, 1994

To speak of ethnic identity, we must first "take sides", i.e., place in a theoretical and ideological position the meaning of ethnicity[13] , just like what currently happens with many notions in social sciences, which are many, varied and often contradictory of the heated reflections that exist around it.

Before doing so, it is important to note that the notion of ethnicity appears as a concept in full recognition of having an entirely social meaning,

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12   In this regard I agree with the critique of Barth (1969) when he mentions that one of the main weaknesses of the descriptions of ethnic groups is to define, delimit and group them based on their attributes or cultural categories, which are not necessarily that they are sufficiently distinct to sustain the limits or boundaries of differentiation that are constitutive of identity

13   I do not speak of "ethnicity" since I retook the position of Cardoso (1992, p.16) when he explains that "Unless confused with *group* (ethnic), ethnicity is a "classifier" operating within the interethnic system and the ideological level, as a result of collective representations polarized by social groups in opposition, whether latent or overt. Such groups are ethnic insofar defined or identified as taking advantage of cultural, "race" or religious "symbols.

unlike the notion of race that started from the idea of the existence of permanent biological components. (Giddens, 2001) .

In the case of the notion of ethnic group the discussion - increased in modern times as a result of social, cultural and economic political transformations and injustices that have been committed on behalf of the notion and social movements which have sought recognition under its flag- is too extensive and encompassing it is beyond the scope of this work. Therefore, it is sufficient to note that I join the non - essentialist vision as mentioned by Valenzuela (2000, p. 97-98) who has recognized that:

> *Ethnic groups are social groups which have certain specific characteristics and cannot be defined essentialist; therefore, it has chosen to describe rather than define them. An important point in delineating ethnic dimensions are its relational aspects, that is, the fact that ethnicity is defined from the group find features that makes it different from the other groups and equal to itself.*

If we think of essentialist so that an ethnic group can be defined as from a set of attributes that should always be present, as in the case of speaking the same language or set of cultural traits, we find that in the process of describing the same is not a criterion that serves to understand from the relational aspect those characteristics which serve to define themselves as opposed to others. For example, Tzotzil, a linguistic group of the Maya family located mainly in the region of the highlands of Chiapas, are identified as such by the language they speak, but they recognize social and cultural differences that are significant according to the place where they live and from which they originate. In other words, the Tzotzil of San Juan Chamula, Huixtán, Zinacantán, or Chenalhó is not the same.

One of the major criticisms on the notion of ethnic groups which Barth (1969) developed stated that for many years it was assumed that what was important for the study and description of these groups was the fact that they shared a common culture . Therefore, fieldwork was based on "ideal, typical models" that defined the significant aspects of its origins, structure and operation thereof, where two problems were derived: the first is focused on the analysis of cultures and not properly organizational and imaginary characteristics thereof; and second, to study an ethnic group involved going out to prove or disprove the characteristic set that arose from these models.

From this position, Barth respectively * defines ethnic groups as follows : "(...) ethnic groups are categories of ascription and identification which are used by the actors themselves and thus have the characteristic of organizing interaction between individuals (...) " and " (...) ethnic groups are considered as a form of social organization (...) the critical feature (...)

the self - ascription and ascription characteristics by others (...) ". (1969 pp.10-11-15 *)

These statements are possible because for him the need to differentiate is not culture itself, because in many cases we find striking cultural similarities between ethnic groups who described themselves as radically different or are far apart geographically, but rather in the fact that there has always been contact between groups, that is, the need to create an ethnic limit makes sense for the presence of the other.

This statement breaks with another romantic approach from which a story has been built that holds that ethnic groups have retained their distinctive features because they have had no contact with other groups, in other words, it is a story of separate towns, each with their own cultures and forms of organization, but the construction of ethnicity is based on interethnic contact that has always existed.

So the important thing is that the investigation of ethnic groups the focus is on the *ethnic boundary*. This limit is the recognition of others, of other groups, so the imaginary border is a foundational and fundamental concept of an all-identity construction of a "we".

Identity can be thought of as a limit, as a social process of demarcation of differences and similarities or sense of belonging, and in this sense I am placing one of the possible meanings that acquire the notion of limit. For example, D'Andrea (. 2005, p 62) says:

> *Sanctioning a belonging means the same as delimiting diversity: to recognize and circumscribe a shared space, draw a line, defining an "outside". Many of the most significant characteristics of a group identity, and much of the conflicts that this can generate, are decided from the nature and form of that border.*

Therefore, going a little further, identity is a border, a type of imaginary border which supports the definition and delimitation of ethnic groups.

> *Identity is not a property of objects, not a truth linked to the nature of things. It is rather the adoption of a -motivated but unprovable border - whose reasons lie not in the nature of the objects but in the requirements of definition and limitation of the subject. Identity is the inclusion of a difference in the continuum of the similar, under which the distinction is made between us and the others (...) (D'Andrea, 2005, pp. 63-64) .*

From all of these considerations we can say then that the various concepts that have been developed around the concept of border, these points are much closer to the proposal of Lattimore who says that a border arises when

two different societies, with different cultural ecologies, contact each other (Fábregas, 2005) .

In this sense the border serves as the limit to make a difference and assert certain relationships that are socially and culturally recognized by a group (Fábregas, 1984).

This concept of a border is not new and reminds us of the history of the term. The border today is a notion that is strong and deeply charged with political connotations and serves to define the geographical line that separates communities which are legally integrated in the form of nation-states (geopolitical) . However, tracing the origin of the term we find another meaning which I have adopted as central to this work following Barth (1969). Think of the border as an imaginary construction of difference, and thus the similarity takes us back to the Middle Ages , a period in which the border was conceived as a "mental category" (Miter, 1997).

For all of this it can be argued that the definition of ethnicity is inseparable from identity, as the definition of it passes by the second in the process of building the "ethnic boundary".

But I have said to this point that it may be argued as too broad and applicable to any type of collective identity. In one sense, the criticism makes sense, because any collective identity has the same attributes and characteristics to be considered as such. But in another, each of the collective identities has features that differentiate it from others, from features which make sense the way it is named.

Hence the ethnic identity that characterizes and differentiates it from others is unlike current social identities in at least three respects. The first is that which was already mentioned, it is a social organization, is an identity that builds forms of socialization, relationships and interaction both inside and outside the ethnic group .

> *To the extent that actors use ethnic identities to categorize themselves and others for purposes of interaction, they form ethnic groups in this organizational sense (...) The features that are taken into account are not the sum of "objective" differences, but rather only those that they actors consider significant (Barth, 1969, p. 15) .*

The second is that it is a contrasting identity, which at its base is defined from the assertion of *us* against the *other*, but it does so always in a 'ethnocentric "manner or from the system of representations recognized as ethnocentrism. (Cardoso, 1992) Understanding other ways of social organization through the "lens" or vision of the self to judge the other , passes through the set of values held within the group, and therefore has

an ideological and ethical character , that is associated with standards and value systems .

Finally, the third aspect has to do with the ideological support of cohesion of the "we" that is built from the proposal of D 'Andrea (2005, pp. 62- 63)

"I propose to define ethnicity as one human group in which membership is based, ultimately, on the subjective representation of a family relationship (…) representation of a blood bond."

"Inbreeding, which represents the heart of ethnicity, is a belief, a subjective conviction. Its effectiveness as a binder of the social group does not depend on its truth value (…) the cohesive power of belief in a common origin is not linked to the truth of a fact. "

It is very important to avoid the frequent criticism of this trait which puts ethnic identity in the essentialist position. The fact that its symbolic and imaginary effectively involves an aspect that can be *made essential* by the group, and does not mean that ethnic identity is that , because we are talking about a subjective belief that does not negate its quality of self - ascription .

In addition, speaking of representations and the order of the symbolic recognizes that ethnic identity refers to culture, since it is built from the symbolic and imaginary framework that gives meaning to the subject in his actions as a member of a group.

Speaking then in this work of ethnic identity, I do not mean that imposed and superimposed political identity formed in connection with a nation-state, but the identities that are referred to by Deep Mexico (Bonfil, 1987) or deep identities (Valenzuela, 2000).

Speaking of ethnic identity as a manifestation of cultural identity, it is separated from the ethnic-nation association. The difference between these types of identity can be found in Valenzuela:

Cultural identity and national identity corresponding to different analytical dimensions, (…) the first caters to the specific configuration of the world of life of social groups and the second contains an ideological-political dimension identified with a national project, (…). (2000, p.110)

In addition to the need to clarify the difference between national and ethnic identity, in the case of Mexico there is another important aspect mentioned in connection with the second (Peña-Cuanda and Esteban, 2012) . In our country's ethnic identity it is intended as a construction of indigenous identity, which are virtually synonymous because the ethnic groups in

the territory, according to the features previously mentioned, would be indigenous groups[14] . Hence for this work the notion of ethnic group is worked equally as a synonym of indigenous group, recognizing both as a generalization to appoint a wide variety of groups.

In conclusion, I would like to make a methodological remark. I consider that the challenge of studying ethnicity from the position outlined here lies in having the ability to listen, observe and discuss with the subjects themselves on those elements in a continuous, mutable manner, and that they remain permanently, incorporated and reinvented in groups to characterize themselves as belonging to a particular ethnic group. As Valenzuela (2000), notes, this process can also develop because:

> (...) there can exist as relevant aspects, unweighted by social groups, that change by modifying the context of their daily lives and that, given the presence of cultures whose difference with them is greater, identify or build commonalities (. ..) (Valenzuela, 2000, p. 99).

This brings us to the current context of accentuation of interethnic daily contact and continuous and reciprocal crossing of borders or ethnic boundaries, something that leaves the purposes of this paper and that therefore I need only point out.

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14   In fact, characterizing ethnic groups as indigenous groups is an affirmation explained by Bonfill (1987) from the hypothesis of the common origin of these groups under the idea of Mesoamerica. However, this is an idea that is still quite controversial and by entering into its debate I stay away from the intention of this work.

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ACADEMIC PAPERS

DATABASE MANAGEMENT WITH POSTGRESQL.
LAB 5. BACKUP OF DB AND DATA EXPORT BETWEEN DIFFERENT DBMS

—

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—*Abstract*—

The series of PostgreSQL Database Administration Labs shows the practical administration of this type of systems, which is widely used in the software development industry. Databases are the tool that all companies need to store the information they generate, and it is in this type of systems where it is stored, hence the importance of understanding and applying the standard management concepts that are used in the industry. The PostgreSQL system is used because it offers the mechanisms that have similar systems but of proprietary character. PostgreSQL is offered under a PostgresSQL license, which allows, from the point of view of the owner of an information system, to avoid payment of expensive licenses for the use of a database.

Keywords.

Database Management, SQL, Programming of stored procedures, postgreSQL.

This fifth installment of a series of six Database Management Labs (DML) teaches the backing up a database and exporting data between different relational database management systems (DBMS). For this laboratory it is necessary that the reader has two computers, one of them running the Windows operating system and the other with Linux. For the transfer of files between both operating systems we will be using the file transfer protocol (FTP), which is why it will be necessary to install the FTP server in the equipment that uses Linux.

The laboratories have been designed to provide the concepts and the necessary experience to know the system in detail, and to take advantage of the "copy and paste" function offered by the operating system to decrease the effort of the reader in the preparation of the work environment and in the solution of problems. The section called "additional work" requires the reader to apply the experience gained in solving problems related to the central theme of the laboratory. The basics section shows the command syntax and provides some explanations of their use, and this material is taken from the System User Manual PostgreSQL which is available on the official website (https: //www.postgresql. org / docs / 9.3 / static /) of the tool. In some cases it has been taken from the official site in Spanish. This section describes some commands and applications of the Linux operating system whose descriptions of use and / or syntax have been taken from the user manuals of the system and have been supplemented with publications on the Wikipedia site (en.wikipedia.org). The basic concepts are applied around the same project that we use in this series: "ACME University", which is a product of the author's imagination, as well as the practical solution of the problems that are raised. The books offered in the references section serve as a query to backup some of the concepts that are applied in the practical solution of database management problems.

These laboratories have been prepared to provide practical experience to students of the Database Administration class of the Degree in Computer Systems offered at the Faculty of Public Accounting (FPA) of Campus IV of the Autonomous University of Chiapas (UNACH) . In the FPA, we have at least 14 years of experience in the use of PostgreSQL in classrooms, for research projects and in systems that have been implemented for the automation of daily activities of the FPA. As a result of this academic and industrial experience, these labs have been obtained that are used in classrooms to train our students. It is also known that they are a source of consultation for graduates working in the business sector.

As previously mentioned, the tool has features and standard programming languages that proprietary systems offer, so examples can easily be applied to other database systems on the market, or they can

serve as reference for applying the concepts in industrial projects. They can also serve as reference to computer science professionals.

OBJECTIVE

The reader will learn how to use backup procedures, as well as how to migrate data between different Database Management Systems.

PREREQUISITES

The reader is expected to have prior experience in the use and conversion of Entity-Relationship (ER) diagrams- topics associated with Database Design are not covered in this document. It is also expected that the reader has knowledge of programming in any programming language. If you need further information on PLPGSQL, we suggest you visit the site: http://www.postgresql.org/docs/9.3/static/plpgsql.html , or find this information in the book PostgreSQL (2003) 1 by authors Susan and Korry Douglas.

It is also expected that the reader will have experience in connecting local networks, as it is necessary to configure the file transfer system (FTP), the client on Windows and the server on Linux. Finally, you need to install the PostgreSQL version 9.3 database on the Windows or Linux operating system, check the requirements for installation on the official website of the tool: www. Postgresql.org. The system can be downloaded from the website:

http://www.enterprisedb.com/products-services-training/
pgdownload#windows

If you have any questions regarding PostgreSQL, I recommend you visit the official site with information published in Spanish : http://www.postgresql.org.es/primeros_pasos.

Parts of which this laboratory is composed:

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

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1   (ISBN: 0672327562).

1. PROJECT TO BE DEVELOPED

The exercise to be carried out consists of a project that describes the problem of a company dedicated to the provision of educational services: after reading the text, the E-R diagram is generated with the solution to this problem, and is followed by the creation of the tables and population of the tables, and finally onto working with the permissions of groups and users.

ACME University Project

In UACME, two types of courses are offered in the special summer period in which summer courses and extracurricular courses are taught. The former are subjects that a regular student studying a course in this period is allowed to advance up to two subjects; While the latter are special training courses offered to regular students as students or outside professionals.

The teachers of the UACME are the only ones who are allowed to give these courses, for which they receive an additional payment; they are paid according to a scale that indicates the cost of the time of these courses according to the academic level of the teacher. The payment is generated from the discharge of the course and it is only allowed to issue a check for each course. In addition, students must pay additionally for the cost of the semester in order to attend the classes.

UACME has two departments that intervene in the administration of the courses:

A) Department of Administration (DA) and B) Department of School Control (DSC). The DA makes payment to teachers and charges students. The DA is led by Accountant Avila and is assisted by Mr. Cancino. The DSC is led by Lic. Barroso and assisted by Mr. Tirado, Mr. Martínez, Mr. Aquino and Mr.Ramos. It is here where it is decided which courses are taught in the period, who teaches them, and who is accepted from the students applications. A special case is that of the teachers, since the DA is the one who can modify the biweekly salary, while the DSC cannot even see this data. The curious thing is that, it is the DSC who accepts the teachers and registers them in the system, but it is the DA where the salary is captured. It is important for the administration of the UACME that this policy is applied to the letter, and that it is implemented directly on the DB. Below is a detailed description of the tables to which the personnel of each area:

Tables that are allowed access to the staff of the Administrative Secretary: Checking account, Check, Tab, Teachers, Concept, Receipt, and Detailed Receipt.

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

Tables that are allowed access to the staff of the School Secretary are: Special courses, Extracurricular courses, Classes, ECSummer, ECExtracurricular, Students, Bimester, Abscences, SchoolCalendar

Figure 1. E / R diagram that solves the above problem.
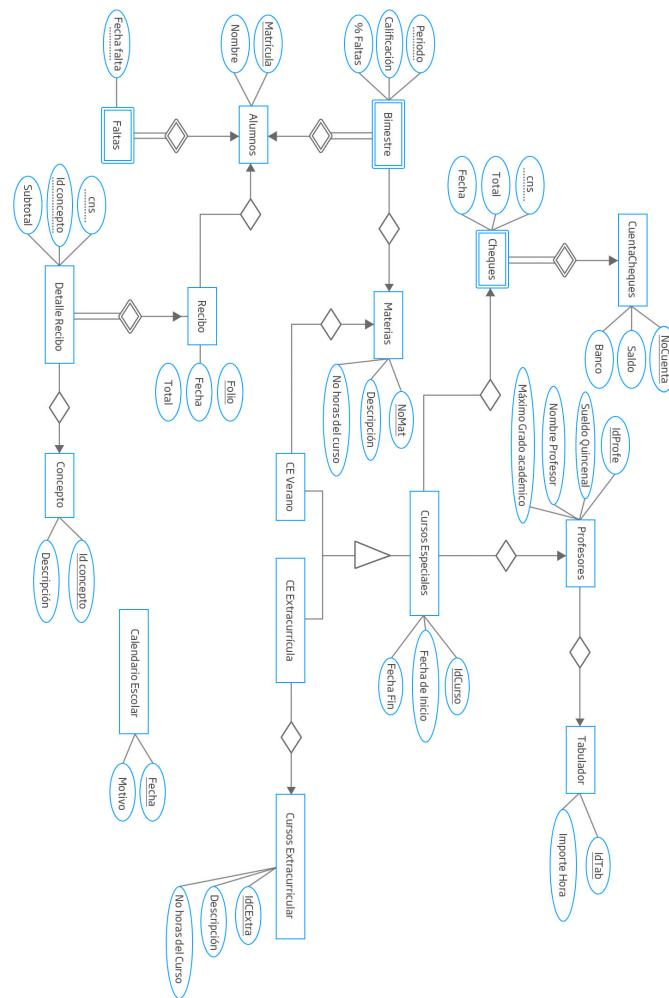
2. BASIC CONCEPTS

COPY— copy of data between files and tables

Syntax

```
COPY [ BINARY ] table [ WITH OIDS ]
FROM { 'filename' | stdin }
[ [USING] DELIMITERS 'delimiter' ]
[ WITH NULL AS 'null string' ]
COPY [ BINARY ] table [ WITH OIDS ]
TO { 'filename' | stdout }
[ [USING] DELIMITERS 'delimiter' ]
[ WITH NULL AS 'null string' ]
```

Entries

- BINARY - Changes the behavior of field formatting, forcing all data to be stored or read as binary objects, rather than as text.
- *Table* - The name of an existing table.
- WITH OIDS - Copy the unique internal object identifier (OID) for each row.
- *Filename* - The absolute path in the input or output file format Unix.
- Stdin - Specifies that the input comes from a conduit or terminal.
- Stdout - Specifies that the output goes to a conduit or terminal.
- *Delimiter* - A character that delimits the input or output fields.
- *null print*- A string to represent NULL values. The default value is "\ N" (backslash-N), for historical reasons. You may prefer, for example, an empty string.

Note: For a copy input, any data that matches this string will be stored as a NULL value, so you should be sure to use the same string you used for the copy output.

Exits

- COPY - The copy completed successfully.
- ERROR: *reason* - The copy failed for the reason stated in the error message.

Description

COPY moves data between Postgres tables and standard file system files. **COPY** instructs the Postgres server to read or write from or to a file. The file must be directly visible to the server, and the full name must be specified from the server's point of view. If stdin or stdout is specified, the data goes from the client application to the server (or vice versa).

Notes

The BINARY keyword forces all data to be stored or read as binary objects instead of as text. This is somewhat faster than the normal behavior of COPY but the result is not usually portable, and the generated files are somewhat larger although this is a factor that depends on the data itself. By default, when a text is copied a tab ("\ t") is used as the delimiter. The delimiter can be changed by any other character using the USING DELIMITERS keyword. Characters within data fields that match the delimiter will be enclosed in quotation marks. It is to be first a *select access* on any table whose values are read by **COPY**, and *insert or update access* on the table that are to be inserted values. The server needs the proper Unix permissions on any file to be read or written with this command. The USING DELIMITERS keyword specifies a character that will be used to delimit between columns. If multiple characters are specified in the bounding string, only the first character will be used.

Tip: Do not confuse COPY with the \ copy of psql instruction.

- **COPY** does not invoke rule or default actions in the columns. However, it can invoke triggered procedures.

- **COPY** stops operation at the first error. This does not cause problems in the case of

- COPY FROM, but the destination, of course, is partially modified in the case of a COPY TO.

- **VACUUM** can be used to clean up after a failed copy.

Because the working directory of the Postgres server is not normally the same as the working directory of the user, the result of copying the "foo" file (without adding path information) can lead to unexpected results that go

unnoticed by the user. In this case, instead of foo, we end up with $ PGDATA / foo. Typically, the full path should be used as it would look from the server, specifying the files to be copied.

Files used as arguments to **COPY** must reside or be accessible by the server machine database on local disks or on a network file system. When a TCP / IP connection is used, and a target file is specified, that file will be written to the machine where the server is running, not to the user's machine.

FILE FORMATS

Text Formatting

When COPY TO is used without the BINARY option, the file will have each row (instance) on a single line, with each column (attribute) separated by the delimiter character. The internal delimiter characters (the internal characters that match the delimiter) will be preceded by the backslash character ("\"). Attribute values are text strings generated by the output function associated with each of the attribute types. The output function for a type should not attempt to generate the backslash character; this will be generated by the COPY command.

The format for each instance is:

```
<attr1><separator><attr2><separator>...<separator><attrn><newline>
```

The identifier is at the beginning of the line, when specified WITH OID, if COPY sends its output to standard output rather than a file, it will send a backslash ("\") and a period, followed by a line jump character on a separate line, when its exit ends. Similarly, if COPY is reading a standard output, wait for a backslash and a point; Followed by an end of line, as the first three characters of a line to indicate the end of the file. However, COPY will terminate (and then terminate the application server) if you find an EOF before finding this string that indicates the end of file is located. The backslash character has other special meanings. A literal inverted slash character is represented as two consecutive slashes ("\\".) The tab character is represented by a backslash and a tab. The end of line character is represented as a backslash and a line end. Test data not generated by PostgreSQL will need to convert the backslash character to a pair of slashes to ensure that they are properly loaded (the string "\ N" will always be interpreted as a backslash and an "N" character for compatibility. Most general solution is "\\ N".)

Binary Format

In the case of COPY BINARY, the first four bytes of the file will be the number of instances in the file. If the number is zero, the COPY BINARY command will read until the end of the file is located. Otherwise, it will stop reading when you read that number of instances. The remaining data in the file will be ignored.

CONTENTS OF A COPY BINARY FILE

Alignment of binary data

On Sun-3s computers, the 2-byte attributes are aligned in four-byte groups. Character attributes are aligned in single-byte groups. On most other machines, all attributes greater than one byte are aligned in four-byte groups. Note that the attributes of variable length are preceded by the length of the attribute; The matrices are simply continuous strings of the matrix type element.

Use

The following example copies a table to the standard output, using a vertical bar as the field delimiter:

```
COPY country TO stdout USING DELIMITERS '|';
```

To copy data from a Unix file to the "country" table:

```
COPY country FROM '/usr1/proj/bray/sql/country_data';
```

Here is an example of data suitable to be copied to a table from stdin (since they have the termination sequence on the last line):

```
AF AFGHANISTAN
AL ALBANIA
DZ ALGERIA
...
ZM ZAMBIA
ZW ZIMBABWE
\.
```

Compatibility

SQL92

There is no COPY statement in SQL 92.

pg_dump — Extract a Postgres database into a script file

Syntax

```
pg_dump [ base_de_datos ]
pg_dump [ -h huésped ] [ -p puerto ]
[ -t tabla ]
[ -a ] [ -c ] [ -d ] [ -D ] [ -n ] [ -N ]
[ -o ] [ -s ] [ -u ] [ -v ] [ -x ]
[ base_de_datos ]
```

Entry.

Pg_dump accepts the following arguments from the command line:

Argument	Description
base_de_datos	Specifies the name of the database to be extracted. *dbname* defaults to the value of the USER environment variable.
-a	Dumps only the data, not the schema (the definitions).
-c	Clean the schematic before creating it.
-d	Dumps the data as its own string inserts.
-D	Dumps the data as inserts with attribute names.
-n	Suppress the double quotation marks of the identifiers, unless they are absolutely necessary. This can cause problems loading the same if this dumped data contains reserved words used by the identifiers. This was the standard behavior in pg_dump pre-v6.4.
-N	Include double quotes on identifiers.
-o	Dumps the object identifiers (OIDs) for each table.
-s	It dumps only the schema (the definitions), not the data.
-t tabla	Dump data for table only.
-u	Uses authentication via password. Request a username and password.
-v	Specifies the verbose mode.
-x	Prevents ACL dumps (grant / revoke commands) and property information from the table.
-h huésped	Specifies the host name of the machine on which the postmaster is running.The standard is to use a Unix local domain socket rather than an IP connection.

| *-p puerto* | Specifies the TCP / IP Internet port or Unix local domain socket file extension in which postmaster is waiting for connections to be made. The default port number is 5432, or the value of the PGPORT environment variable (if set) |
| *-u* | Uses authentication with password. Asks for *username* and *password*. |

Exit

Pg_dump will create a file or write to stdout.

The connection to database 'template1' failed. ConnectDB () failed: Is the postmaster running and accepting connections on the 'UNIX Socket' on port 'port'?

Pg_dump could not connect to the postmaster process on the specified host and port. If you see this message, verify that postmaster is running on the indicated host, and that you specified the correct port. If your site uses an authentication system, verify that you have the required Authentication credentials.

The connection to database 'database_data' failed. FATAL 1: SetUserId: the user 'username' is not 'pg_shadow' You do not have a valid entry in the pg_shadow relationship and are not allowed to access Postgres. Contact your Postgres administrator.

dumpSequence(table): SELECT failed You do not have permission to read the database. Contact your Postgres site administrator.

Note: pg_dump internally executes SELECT statements. If you have problems running pg_dump, verify that you can select the database information by using, for example, psql.

Description

Pg_dump is a utility to dump a Postgres database into a script file containing query commands. The script files are in text format and can be used to rebuild the database, even on other machines and with other architectures. Pg_dump will produce the queries required to regenerate all user-defined types, functions, tables, indexes, aggregates, and operators. Additionally, all data is copied in text format which can be copied again, it can also be imported to tools for editing.

Pg_dump is useful for dropping the contents of a database that is going to be moved from one Postgres installation to another. After running

pg_dump, you should examine the output script to see if it contains any warnings, especially in light of the limitations quoted at the bottom.

Notes

Pg_dump has few limitations. The limitations arise mainly from the difficulty in extracting certain meta-information from the catalogs of the system.

- pg_dump does not understand partial indices. The reason is the same as mentioned above; The predicates of the partial indices are stored as planes.
- pg_dump does not handle large objects. Large objects are ignored and deal with them manually.

Use

To dump a database of the same name as the user:

```
% pg_dump > db.out
```

To reload this database:

```
% psql -e base_of_data < db.out
```

pg_dumpall —Extrae all Postgres database data in a script file.

Syntax

```
pg_dumpall [connection-option...] [option...]
```

Entry

Pg_dumpall accepts the following command line arguments:

Argument	Description
-a	Dump only the data, not the schema (data definitions).
-c	Includes commands for dropping databases before recreating them. DROP commands for roles and table spaces are added as well.
-f filename	Send the output to a specified file. If this is omitted, the standard output is used.

-g	Empty only global objects (roles and tablespaces), not databases.
-i	An obsolete option that is now ignored.
-o	Empty the object identifiers as part of the data for each table. Use this option if your application references the OID columns in some way (for example, in a foreign key constraint). Otherwise, this option should not be used.
-O	It does not issue commands to set ownership of objects to match the original database. By default, pg_dumpall executes the ALTER OWNER or SET SESSION AUTHORIZATION statements to set the property of the created schema elements. These statements will fail when the script is executed, unless it is initiated by a superuser (or the same user who owns all the objects in the script). To make a script that can be restored by any user, but that will give that user ownership of all objects, specify -O.
-r	Empty only roles, not databases or tablespaces.
-s	Empty only the definitions of objects (schemas), not the data.
-S	Specifies the name of the superuser to use when the triggers are disabled. This is relevant only if -disable-triggers are used. (Normally, it is best to leave this out, and instead start the resulting script as superuser.)
-t	Empty only table spaces, not databases or roles.
-v	Specifies verbose mode. This will cause pg_dumpall to show the start / stop times in the dump file, and the standard error progress messages. It will also enable detailed output in pg_dump.
-V	Print the version of pg_dumpall and exit.
-x	Prevents empty access privileges (grant / revoke commands).
--binary-upgrade	This option is for use of on-site upgrade utilities. Its use for other purposes is not recommended or backuped. The behavior of the option may change in future versions without notice.
--column-inserts --attribute-inserts	Empty data as INSERT commands with explicit column names (INSERT INTO table (column, ...) VALUES ...). This will make the restoration very slow; It is mainly useful for making dumps that can be loaded into non-PostgreSQL databases.
--disable-dollar-quoting	This option disables the use of expressions for function bodies and forces them to be expressed using standard SQL syntaxes.
--disable-triggers	This option is only relevant when creating a data-only dump. Tells pg_dumpall to include commands to temporarily disable triggers in target tables when data is reloaded. Use this if you have referential integrity checks or other triggers on tables that you do not want to invoke during data reloading. Currently issued commands for --disable-triggers must be made as superuser. Therefore, you must also specify a superuser name with -S, or preferably be careful to start the resulting script as superuser.
--inserts	Empty data as INSERT commands (instead of COPY). This will make the restoration very slow; It is mainly useful for making dumps that can be loaded into non-PostgreSQL databases. Note that the restore may fail completely if you have altered the order of the columns. The --column-inserts option is safer, but even slower.
--lock-wait-timeout= timeout	It does not wait forever to acquire the shared table closures at the beginning of the emptying. Instead, it fails if it can not lock a table within the specified timeout. The timeout can be specified in any of the formats accepted by SET statement_timeout. Allowed values vary depending on the version of the server from which it is being emptied, but an integer number of milliseconds is accepted by all versions from 7.3. This option is ignored when it is downloaded from a server prior to 7.3.
--no-security-labels	Do not empty the security labels

--no-tablespaces	It does not produce commands to create table spaces or select table spaces for objects. With this option, all objects will be created in the table space that is the default when restoring.
--no-logged-table-data	It does not overturn the contents of unregistered tables. This option has no effect on whether or not the table (schema) definitions are rolled back; Only suppresses the dump of the data in the table.
--quote-all-identifiers	Force express all the identifiers. This option is recommended when downloading a database from a server whose main version of PostgreSQL is different from that of pg_dumpall or when the output is destined to be loaded on a server of a different main version. By default, pg_dumpall expresses only identifiers that are reserved words in their own parent release. This sometimes results in compatibility issues when dealing with version servers that may have slightly different sets of reserved words. The use of --quote-all-identifiers avoids these problems, at the price of a harder to read dump script.
--use-set-session-authorization	It executes the SET SESSION AUTHORIZATION commands that are SQL standard instead of the ALTER OWNER commands to determine the property of the object. This makes the dump more compatible with standards, but depending on the history of the objects in the dump, it may not be restored correctly.
-? --help	Displays the help of the pg_dumpall command line arguments, and exits execution.

The following command-line options control the connection parameters to the database.

Argument	Description
-d connstr --dbname=connstr	Specifies the parameters used to connect to the server, such as a connection string. See Section 31.1.1 for more information. The option is called --dbname by consistency with other client applications, but because pg_dumpall needs to connect to many databases, the name of the database in the connection string will be ignored. Use the -l option to specify the name of the database used to dump global objects and to discover which other databases should be dumped.
-h host --host=host	Specifies the host name of the computer on which the database server is running. If the value starts with a slash, it is used as a directory for the Unix domain socket. The default value is taken from the PGHOST environment variable, if set, otherwise a Unix domain socket connection is attempted
-l dbname --database=dbname	Specifies the name of the database to connect to to dump global objects and discover which other databases to dump. If not specified, the postgres database will be used, and if it does not exist, template1 will be used.
-p port --port=port	Specifies the TCP port or the local Unix domain socket file extension where the server is listening for connections. By default to the PGPORT environment variable, if set, or to a compiled default value.
-U username --username=username	The name of the user you connect to.
-w --no-password	Never run a password request. If the server requires password authentication and a password is not available by other means, such as an .pgpass file, the connection attempt will fail. This option can be useful in batch jobs and scripts in which no user is present to enter a password.

-W --password	Forces pg_dumpall to request a password before connecting to a database. This option is never essential, as pg_dumpall will automatically prompt for a password if the server requires password authentication. However, pg_dumpall will miss a connection attempt by discovering that the server wants a password. In some cases it pays to write -W to avoid further connection attempt. Note that the password request will reappear for each database to be emptied. It is usually better to set up a ~ / .pgpass file than to rely on manual password entry.
--role=rolename	Specifies a role name that will be used to create the dump. This option causes pg_dumpall run a SET ROLE command rolename after connecting to the database. It is useful when the authenticated user (specified by -U) lacks privileges needed for pg_dumpall, but can switch to a role with the necessary rights. Some facilities have a policy against log directly as a superuser and use of this option allows downloads to be made without violating the policy.

Exit

pg_dumpall will create a file or write to stdout.

The connection to the database 'template1' failed. ConnectDB () failed: Is the postmaster running and accepting connections at 'UNIX Socket' on port 'port'? pg_dumpall could not connect to the postmaster process on the specified host and port. If you see this message, ensure that the postmaster is running properly on the host and port you specified. If your workplace uses some authentication system verify that you have obtained the authentication credentials.

The connection to the database 'dbname' failed. FATAL 1: SetUserId: the user 'user_name' is not 'pg_shadow' You do not have a valid entry in the pg_shadow relationship and will not be allowed access to Postgres. Contact your Postgres administrator.

dumpSequence(table): SELECT failed

You do not have permission to read the database. Contact your Postgres administrator.

Note: pg_dumpall internally executes SELECT . If you have problems running pg_dumpall, make sure that you can see information from the database using, for example, psql.

Description

pg_dumpall is designed to dump all databases Postgres data in a file. Pg_shadow also flushes the table, which is global to all databases. pg_dumpall includes in this file the right to automatically create each dumped database

before loading the data orders. pg_dumpall takes all pg_dump options , but -f, -t and dbname should be omitted. Refer to pg_dump for more information regarding this utility.

Use

To dump all databases:

```
% pg_dumpall > db.out
```

Tip: You can use most pg_dump options for pg_dumpall.

To reload this database:

```
% psql -e template1 < db.out
```

Tip: You can use most psql options when reload them.

Cron

In the Unix operating system, cron is a regular process manager in the background (daemon) running processes or scripts at regular intervals (e.g., every minute, day, week or month). The processes to be executed and time in which they must do so specified in the crontab file. Cron could be defined as the *"equivalent" Windows Scheduled Tasks* . Enabled users to create your crontab file specified in the cron.allow file. Similarly, those who are not allowed to appear in /etc/cron.d/cron.deny, or /etc/cron.deny, depending on the version of Unix. This section is available on the website: https://es.wikipedia.org/wiki/Cron_(Unix)

FILE FORMAT CRONTAB

Crontab file example:

```
SHELL=/bin/bash
PATH=/sbin:/bin:/usr/sbin:/usr/bin
MAILTO=root
HOME=/
# run-parts
01 * * * * root nice -n 19 run-parts /etc/cron.hourly
```

```
50 0 * * * root nice -n 19 run-parts /etc/cron.daily
22 4 * * 0 root nice -n 19 run-parts /etc/cron.weekly
42 4 1 * * root nice -n 19 run-parts /etc/cron.monthly
```

To add, remove or modify tasks, you must edit the crontab. This is done with the command *crontab -e* , which will open the editor defined in the environment variable EDITOR and load the file crontab for the user who is logged in . Each time the crontab is executed, a message appears on the user environment variable is sent MAILTO , if enabled, indicating the work done..

Syntaxs

The format cron configuration is simple.

- The number sign "#" is a comment, everything that is after that character will not be executed by cron .
- The execution time specified in accordance with the following table:

    1. Minutes: (0-59)
    2. Hours: (0-23)
    3. Days: (1-31)
    4. Month: (1-12)
    5. Weekday: (0-6), where 1=Monday, 2=Tuesday,...
        6=Saturday and 0=Sunday

To specify all possible values of a variable an asterisk (*) is used.

- The last column is the absolute path of the binary or script to be executed.

Examples

For example:

```
30 10 * * 1 /usr/bin/who >> /home/quien.tex
```

Executes the command WHO every Monday at 10:30 and saves the file from the quien.tex When two or more values in each variable, these must be separated by commas, continuing the above example:

```
0,30 * * * 1 /usr/bin/who >> /home/quien.tex
```

WHO executes the command every Monday every half hour and saves the output in the file quien.tex
If we want to run every 15 minutes would:

```
0,15,30,45 * * * * /usr/bin/who >> /home/quien.tex
```

O

```
*/15 * * * * /usr/bin/who >> /home/quien.tex
```

In this example we will see how to pass more than one command to cron and can be programmed step as a download:

```
30 21 * * * cd /media/sda7/isos;wget http://mipagina.com/archivo a
descarga.miarchivo
```

The other is to schedule computer shutdown. In this case every Saturday at 21.30

```
30 21 * * 6 /sbin/shutdown -h now
```

The following protocols are embedded in the Linux operating system and serve to solve the problems presented in this document are listed, the dumped information is taken from the site: es.wikipedia.org/wiki

FILE TRANSFER PROTOCOL (FTP).

FTP stands for File Transfer Protocol in computing, and is a network protocol for transferring files between computers connected to a TCP-based client-server architecture systems. From a client computer you can connect to a server to download files from it or to send files, regardless of operating system used on each computer. The FTP service is provided by the Application layer model layer TCP / IP network to the user, usually using the network port 20 and 21. A basic problem with FTP is that it is designed for maximum speed connection but not maximum security, since all exchanges of information, from the login and password of the user on the server to transfer any file, it is done in plain text without any encryption, so an attacker can capture this traffic, access the server, or appropriate transferred files. To solve this problem there are useful applications like scp

and sftp, included in the SSH package, that transfer files but encrypting all traffic.

THE FTP MODEL

The protocol interpreter (PI) user initiates the control connection in port 21. The standard FTP commands are generate the user PI and transmit it to the server process via the control connection. Standard replies are sent from the IP server to the IP user to control connection in response to orders. These orders specify parameters for FTP data connection (data port, transfer mode, representation type and structure) and the nature of the operation on the file system (store, retrieve, add, delete, etc.). The data transfer process (DTP) user or another process in place must wait for the server to initiate the connection to the specified data port (port 20 in standard mode or active) and transfer the data based on parameters that have been specified.

Communication between client and server is independent of the file system used on each computer, so it doesnt matter that their operating systems are different, because the entities that communicate with each other are the PI and DTP, using the same standardized protocol : FTP.

It also should be noted that the data connection is bidirectional, ie can be used simultaneously to send and receive, and do not need to exist throughout the duration of the FTP connection.

FTP SERVER

An FTP server is a special program that runs on a server computer usually connected to the Internet (although it may be connected to other networks, LAN, MAN, etc.). Its function is to allow the exchange of data between different servers / computers. Typically, FTP server programs are not usually found on personal computers, so a user will typically use FTP to connect remotely to one and thus exchange information with it.

FTP CLIENT

When a browser is not equipped with the FTP function, or if you want to upload files to a remote computer, you will need to use an FTP client program. An FTP client is a program that is installed on the user's computer, and uses the FTP protocol to connect to an FTP server and transfer files, either for download or upload. To use an FTP client, you need to know the file name, the computer in which it resides (server, in the case of downloading files),

the computer you want to transfer the file (in case you want to upload our server) and the folder where it is located.

Some basic FTP clients in console mode are integrated into operating systems, including Windows, DOS, Linux and Unix. However, no customers available with added options and graphical interface. Although many browsers already have integrated FTP, it is more reliable when used to connect to non-anonymous FTP servers to use a client program.

GUIDE FTP COMMANDS

When a client attempts to communicate with the FTP server, you can specify the direction of the latter in the command line; but if is not done the client goes into command interpreter mode and awaits instructions from the user. The following is a summary of commands that can be useful for the work of this laboratory and are part of *User Manual* that Linux Ubuntu offers (http://manpages.ubuntu.com/manpages/trusty/man1/tnftp.1.html):

Command and arguments	PERFORMING ACTION
open *server*	Initiates a connection to an FTP server
close o **disconnect**	Ends an FTP connection without closing the client program
bye o **quit**	Ends an FTP connection and working session with the client program
cd *directory*	Changes the working directory on the server
delete *file*	Deletes a file on the server
mdelete *pattern*	Deletes multiple based on a pattern that applies to name files.
dir	Displays the contents of the directory in which we are on the server.
get file	Gets a file.
mget *file*	Gets multiple files.
hash	Enables printing characters # as files are transferred, as a progress bar.
lcd *directory*	Changes the local working directory.
ls	Displays the contents of the directory on the server.
prompt	Enables / disables confirmation by the user command execution. For example to delete multiple files.
put *file*	Send a file to the active directory server.
mput *file*	Send multiple files.
pwd	Displays the current directory on the server.
rename *file*	Renames a file on the server.
rmdir *directory*	Removes a directory on the server if that directory is empty.
status	It displays the current connection status.
bin o **binary**	Activates the binary transfer mode.
ascii	Actives transfer mode ASCII text mode.
!	Exits to temporarily command line without dropping the connection.
exit	Back to Shell operating system.

? *command name*	Displays information on the command.
? o **help**	Displays a list of available commands.
append *filename*	Continues a download that has previously been cut.
bell	Enable / disable playing a sound when any process is over file transfer.
glob	Enables / disables the display of long names of our PC.
literal	This command can be executed server commands remotely. To find the available used: literal help
mkdir	Create the directory indicated remotely.
quote	Does the same function as literal.
send *fielname*	Send the specified file server to active directory.
user	To change your username and password without having to exit the ftp session.

Example of use: Execution (from my side) of a process of downloading computer files 16.20.1.1
(Server) to my local computer:

```
loval@OvalBComm: $ Ftp -i 16.20.1.1
# bin
# lcd /usr/local/Respaldos/
# get BDUACME20080810
# quit
```

<div align="center">

BD BACKING

</div>

PostgreSQL databases must be backed up on a regular basis, because they contain valuable information. The procedure is essentially simple, and it is important to have a basic understanding of the underlying techniques. There are three basic approaches to backing up a PostgreSQL database, and each has strengths and weaknesses:

- Pg_dump SQL.
- Backup file system.
- Online backup.

In this paper we focus using the `pg_dump` command to perform such backups.

Microsoft proposes a strategy to ensure the availability of data (https://msdn.microsoft.com/es-es/library/bb972245.aspx) when the tool they manufacture is used: SQL Server. This same strategy applies to all databases, and the procedure is presented below:

The basic elements of a data availability strategy are:

- Plan for the future.
- Understanding transaction logs and how to use to restore data.
- Backup the database.
- Restore data.

Creating a backup strategy database

Backups of the database are a fundamental part in creating this strategy; without an effective security backup strategy , we could find ourselves in a situation where we have a corrupt database but not enough backups to restore. The types of faults that may occur are the following, among others:

- Invalid user data.
- Hard disk failure.
- Server failure.

To avoid losing everything because of a fault, follow the following recommendations:

- Back up frequently (this depends on the use of the database).
- Keep full backups offsite.
- Performs consistency checks with some frequency.
- Manage your backups effectively.

RECOVERY MODELS

SQL supports the following 3 recovery models:

A) Full Recovery: is the most complete model; If a fault occurs on your hard drive, it allows you to recover the base until the right time of the judgment or at any point in time. To accomplish this all transactions are recorded, which makes the registry grow too much since the bulk operations are also recorded. This is a very powerful feature when there is a 24 x 7 database; It allows us to ensure that the least amount of modifications may be lost.

B) Mass Registry: This is a full backup. However, if the hard disk fails, you can recover the bulk copy model but does not allow you to retrieve the base to any point in time.

C) Simple Recovery: This is the simplest model of all, it occupies less disk space and is occupying less system resources, but also exposes it to greater data loss; This model does not allow us to recover to any point in time or to the time of failure.

All of these models have advantages and disadvantages; determining the best of them depends on your individual requirements. For example, a database that has many transactions and it need fully recover as soon as possible would benefit from full recovery model; By contrast, a database that has had many massive updates and no need to recover individual user transactions could use the model of mass registration; Finally, the simple model is used in applications that are not critical or developing applications.

The database backup is easily done, but before realizing it you must take into account the following:

- In order to back up the entire database, while no one is working on it, you must stop Postgres.
- To ensure that no one is working on it you need to turn off the Postgres service or do it after hours. The procedure below describes the steps for backup to the server console, i.e. from the computer where the system is.

Note: To do this from a workstation, you need to connect to the server with applications such as "VNC", "Rdesktop" or "Secure Shell".

Manual backup procedure Postgres:

Open a Terminal window. After opening the terminal, switch to "root" by entering "su" command and clicking the "Enter" key to execute it. When prompted, enter the password "root" and click the "Enter" key. Once found as "root" or "root", the "postgres" server must be stopped. Instruction is entered: */etc/init.d/postgresql stop*

When deploying the next line or the "prompt" (represented by a number sign "#"), Postgres will have stopped. After stopping, it must be lifted with the instruction: */etc/init.d/postgresql start*. When deploying the next line or the "prompt" (represented by a number sign "#"), Postgres will have been picked up.

Now, picking up the Postgres, you can execute the statement to back up the database. If not, you should create a directory to place the files with backups. If there is one , you can go to that directory with the command: : **cd nombre_y_ruta_del _directorio**

For example: *cd /usr/local/Respaldos/* plus "Enter".

One way to tell which directory is located is by entering the command "pwd" plus "Enter"; This will display the name and directory path.

After being placed in the directory where they will generate the backup, the instruction to do it is entered. This statement is as follows:

```
pg_dump -C -u uacme > BDUACME20080810 + "Enter".
```

The system prompted to enter the password. To enter it, typed characters are not displayed. After entering the password, click on the "Enter" key. The cursor is placed on the next line and the backup file of the database will start to occur. While the cursor does not move to the next line, you should not enter anything, because it is generating the backup. The time it takes to do so depends on the size of the database. When finished, the cursor is placed on the next line. If you want to check it has produced the file, you can enter one of the following instructions:

```
"Filename ls -la"
"Ls-la primeras_letras_del_nombre_del_archivo asterisk"
```

For example: `"ls -the_filename" + "Enter".`

This will list the newly created file also deploying its size and the time and date of creation.

Automatic backup procedure Postgres:

The idea of automatic backup is one that is running when no one is working in the offices, to achieve this it is necessary to turn to the CRON system. UACME policy is to run the backup at 23:00 pm, so it is necessary to power cycle the PostgreSQL server before running the backup, say about 10 minutes before it turns off and 5 minutes later we will turn it on.

Steps to perform for automatic backup:

If by chance the first thought is to put the instructions for pg_dump into a script, I'm sorry to disappoint you. We would have a little problem, in that the command will be braking when asking the user password you want to backup. As always, we have a way out. Our new best friend in this case will pgpass. Pgpass is an environment variable. This file is not created by default,

and the procedure varies slightly if we use it in Linux or Windows. In both cases, the file will contain the same information:

```
host: port: database_name: username: password
```

LINUX CASE

In the example, the charge of making the backup is the root user. In order to work, always when we have privileges, we go in the folder / root and create the .pgpass file. A fast way, and assuming that you are signed in as root, would be as follows..

```
Echo "16.20.1.1:5432:mibase:miusuario:micontraseña" >> ~/.pgpass
```

Now the detail of the password is solved. Now, simply create a file which will be programmed to run automatically and we perform the backup. In our script we will put the command:

```
pg_dump -i -h 16.20.1.1 -p 5432 -U miuser -F c -b -v -f "/home/
oval/backup/uacme.backup" uacme
```

- *Modify the appropriate directories to your computer; make sure you have all rights*
- *on directories to use.*

Now when the script needs the password to connect, it will take the Pgpass … and the matter is resolved.

Steps to perform for the cron AutoRun on Linux:

You may need additional information from the vi editor- consult your manual for linux.

- *Open a terminal prompt with the root user.*
- *Run the command crontab -i*
- *Add the following lines (type the letter i)*
  *40 22 * * * /etc/init.d/postgresql stop*
- *45 22 * * * /etc/init.d/postgresql start*
- *0 23 * * * -C -u pg_dump uacme> / home / loval / backup / BDUACME20080810*
- *Record changes: wq*
- *Change the time of your system (change the time to 22:37)*

- *Wait the indicated time and check if the file is generated, using the command "ls" that was explained in the manual backup procedure.*

The case of Windows

To use it, we must create the postgresql folder in c: \ documents and settings \ (user who will run the task) \ AppData. Within this new folder, you will put the pgpass.conf file. Now, within the file, we could have the following parameters:

```
16.20.1.1:5432:mibase:miusuario:micontraseña
```

Steps to perform in the "Scheduled Tasks" AutoRun application in Windows:

Run the application "scheduled tasks", follow the setup wizard and add the following commands at the same times that run on Linux:

```
c:\postgresql stop
/etc/init.d/postgresql start
pg_dump -C -u uacme > c:\respaldos\BDUACME20080810
```

Exporting and importing data

A new problem arises when managers of companies or public bodies decide to change platform information systems, which is a job to which a computer professional may face in their professional lives.

Data export

Suppose the rector of UACME has decided to change the PostgreSQL database for the one called MySQL (www.sun.com/software/products/mysql/getit. jsp), which is why it has asked the Department of Information Technology to launch the relevant project. The MySQL database, will work on equipment that has installed a Linux operating system. However, the president has suggested that it is not willing to pay additional staff to capture information from the old system (PostgreSQL) to the new (MySQL), and therefore requests that look for ways to make a transfer of information one system to another.

Steps to perform to export data (PostgreSQL -> MySQL):
Generate data file for tables in text source computer (Windows).

- *Beware the path where the text file is stored*
- *"/ work area / is equivalent to saying" c: \ work area \ "*
- *the directory I area_work must already exist*
  copy to teachers ' /area_work/prof.txt' With delimiter '';
- *replicate the command for each of the tables, changing table name*
- *and the name of the text file*

Assign static IP address on the target machine (Linux)
- Use the ifconfig command or the System munu-> Settings->network

- Install the vsftpd file (FTP server)
- check the steps on page:
- guia-ubuntu.org/index.php?title=Servidor_de_FTP

Assign static IP address on the target machine (Linux)
- Use the ifconfig command or the System munu-> Settings->network

Create a user account with administrator privileges on the target machine (Linux)
- Menu System-> Administration-> Users and Groups
- Indicate this account as a root directory / home / <user>

Check the path on the target machine (Linux), using a terminal
cd / home / <user>
ls –l

Change to the directory "c: \ area_work\" on the source computer (Windows)
cd / area_work

Send text files generated from the source computer (Windows)
```
$ ftp -i 16.20.10.20
# bin
# put prof.txt
..
-- PUT is repeated for each file that is sent
# quit
```

Install the MySQL server on the target system (Linux)
- follow the steps in this Ubuntu (package manager)

MySQL client run in a terminal.

```
mysql -u root -p
```

Build the database on the target system (Linux - MySQL).

```
create database uacme;
use uacme;
```

Build the tables in the target system (Linux - MySQL).

```
Create Table Teachers (
idprofe int (4) PRIMARY KEY,
idtab int (4),
name varchar (40),
maximum varchar (40),
salary int (4)
);
```

Load the data in the target system (Linux-MySQL)

To read command structure LOAD DATA INFILE read the pages
http://mirror.hostfuss.com/mysql/doc/refman/5.0/es/load-data.html or
http://dev.mysql.com/doc/refman/5.0/en/load-data.html

```
mysql> LOAD DATA INFILE '/home/<usuario>/prof.txt' INTO TABLE
profesores
FIELDS TERMINATED BY ',';
```

-- *Run the load of each file to its respective table*

Verify that all records are loaded correctly.

```
Select * from profesores;
```

-- *Verify that each of the tables has been loaded correctly*

Data Import.

After three years of working with MySQL, the rector has decided that paying
SunFire maintenance equipment is too expensive and again decides who

return to work with PostgreSQL on a Linux computer. As it was done earlier requests, that information system will run automated.

Steps to perform to import data:
Generate the data file text for the table in the source system (Linux-MySQL).

```
SELECT * INTO OUTFILE '/tmp/profesores.txt'
FIELDS TERMINATED BY ',' ENCLOSED BY '' FROM Profesores;
```

- Apply for each of the system tables.
- verify that the directory tmp exists

Send text files generated to the target computer (Windows).

- Using ftp (follow the same instructions as for export), only this
- Once the information will be sent to the contrary.

Build the tables in the target system (Windows - PostgreSQL).

- Use the tables that have already built, clean information
- each table using DELETE FROM ...
- or delete the BD (DROP DATABASE UACME;) and then build all tables.

Load the data in the target system (Windows - PostgreSQL).

```
copy profesores from '/area_trabajo/profesores.txt' with delimiter ',';
```

-- Run this command once for each table.

ADDITIONAL WORK

- Restore backup files generated with using the pg_restore command.
- Back up the table of Teachers of uacme DB.
- Find out if the commands Import and Export data exist in databases: DB2, Informix, Oracle, and Sybase. If possible, get the DBMS via download online and make the necessary tests.
- Insert the data from the Teachers table in a spreadsheet (Excel of MS Office, OpenOffice Calc, etc.), and seek a strategy to convert the proprietary format to a file format comma-delimited text, the result of this conversion must be transferred to the Teachers MySQL or PostgreSQL table using the commands that have already practiced

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TECNOLOGÍA, LECTURA Y NUEVAS ALFABETIZACIONES
(Technology, reading and new literacies)

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This e-book brings together several sections to achieve unity and independence between the parts. The reader will get a consistent result regardless of which one they choose to start their tour. Among their pages or screens, the authors describe the reading situation at the present time and the multiple opportunities that technologies open, integrating with enough correct theoretical contents to frame their reflections- recreational resources in which they recover and reedit local traditional narratives and an appreciation of the context, in addition to the institutional policies and actions that seek to form critical and creative professionals capable of connecting the real world with the virtual world.

The collaborators in this work participated in the enormous effort of the Autonomous University of Chiapas (UNACH) to face the challenges and adapt to the needs of the present times. Through the bright pages of the digital book *Tecnología, lectura y nuevas alfabetizaciones (Technology, reading and new literacies)*, Dra. Rebeca Garzón Clemente and Dr. Jesus Abidán Ramos Salas in collaboration with Spanish researchers, teachers and students of the specialty in Cultural Literacy Writers Processes - present us with various aspects of academic life and the global transformations that affect it. Thus we can realize that academic life - understood primarily as teaching and research - is no longer enclosed within the walls of the university or in the small space of the office, but rather opens to a network of communication with researchers from faraway places, learns in collaboration with students, seeks solutions to various problems by interacting and acting with the subjects involved in the educational process, and much more. The academic community then becomes a networked learning community, open to its environment and to the world, made possible by the available technological innovations and its constant development.

One of the benefits of Information and Communication Technologies (ICT) is the possibility of sharing cultural goods and the knowledge that is generated, which is why now ICTs , which are linked to work and academic generosity, make this virtual book that will not wear out the sheets of paper or is limited to a print run of 500 copies, but is available free for n readers, that is, for those who want no matter how many are open.

 I will now comment on some of the content, hoping not to inadvertently betray the meaning that the authors wanted to give.

THE AGE OF NEW TECHNOLOGIES

Garzón and Ramos present an overview of the evolution of technologies over time. It is difficult to determine the beginning of the use of technologies and even to define precisely why we call so diverse means - sometimes material and other non-material - that humanity has used to facilitate a

task to achieve an end. Technology can be the stone we use to crack a nut, the bits with which a design application develops, or with which surgeons perform microscopic interventions. The purpose of this historical journey is to show us the evolution of technology and to see how it has enriched the concept that we apply to both the rudimentary instruments and technical procedures, or to the logical and systematic frameworks with which we extend the human potential to solve emerging needs.

We have many vestiges of various primitive technologies that were used to expand human capacities that in no way resemble those we now call Information and Communication Technologies (ICT) , called the capacity of storage, propagation and interaction of information with people through different means. In parallel with the technological transition, society has also evolved and we are already experiencing great and irreconcilable transformations. We learn of new advances through different means almost immediately, and many people in different places work on the creation of new technological alternatives to solve problems, to expand knowledge or for leisure.

The evolution of technology has been very accelerated in recent decades and although many are afraid of the brutal changes that are taking place in the world, we have to recognize that many of these changes provide us with well-being and have multiple possibilities that we are just discovering, especially in the educational field.

The purpose of the authors is to show us the current potential of technologies to expand digital literacy and the adherence to it, literacy competence, is both for the advances in technology and for the receptivity and skill of young people in the use of available resources. Education then has an opportunity with the great variety of devices and resources in different formats and networks of access and diffusion with which it can be supported. I provisionally leave in brackets the comments on the limits of the opportunities for broad social sectors, as well as the risks of the circulation of information, just to locate myself in the specific interest of the authors.

Garzón and Ramos focus their interest on the **digital readout**, which is reading enriched by technology, because **learning to read** is the key to **learning to learn** throughout life, and therefore to act competently in the world. That is, weaving all the personal capacities in the networks of social collaboration to face with wisdom the needs of the social, biological, economic, etc. environment. This complex web of relationships in which we can grow as individuals and as a society is made possible by open opportunities for information and communication technologies.

With an average national schooling of just over nine years, we all assume that reading "is a skill that develops from pre-school and reading

comprehension is a competence that is acquired throughout basic education" (p.20). However, on this point it should be remembered that reading ability does not always consolidate itself enough to achieve the management of information and lifelong learning.

The result is that people who know how to read do not understand well what they have read or know how to use the information to solve the problems that are presented to them, whether personal or social. Functional illiteracy, as it is called, affects many people in their development, in their self-esteem, in their employment and in the possibilities of continuing to learn in addition to many social consequences I do not list.

The history of humanity began with writing. The first thing we have as news is the engravings with which our very distant ancestors left a mark of their existence. For example in cave paintings in which we can appreciate how they represented themselves, their environment, their forms of subsistence and their preoccupations with the phenomena that were at that moment inexplicable. As humanity matured over the centuries and developed its knowledge, not only were they refining and making the signs more complex, but it became imperative that everyone knew how to read and write, as well as the domain of arithmetic which is another language. Now it is urgent that we learn other languages to relate to machines, to join productive activities, to underpin the pillars that support and identity our national diversity and to define our place in global processes.

THE HYPERTEXT AND ITS POSSIBILITIES

Social and technological transformations have had to be accompanied by new concepts to designate new things and phenomena. One of those new words that have entered our language is that of hypertext. This concept has several uses and definitions in technological jargon. Here it is used to refer to the very diverse combinations that make thought to organize blocks of information in different formats, linking some elements with others. This is a strategy that allows thought to have unlimited options for assimilating and accommodating knowledge. Let us think of it as a set of flexible, unfinished and constantly revised procedures that rely on resources of a different nature, such as written text, images, videos, music, etc.

The contributions of psychology, sociology and many other disciplines are contained in the development of digital technologies, particularly the Internet, whose structure provides us with clues to follow links that lead us to other texts and other contexts that link and expand the information we are consulting. One of my searches on the Internet, precisely on hypertext, led me to a compilation of quotations made by Lamarca Puente (s / f).

Hence, I borrowed a quote that I find it enlightening that Pierre Lévy said in 1990 in *Les Technologies del'intelligence* :

Technically a hypertext is a set of knots connected by connections. The knots can be words, images, graphics or parts of graphics, sound sequences, complete documents that in turn may be hypertexts. Information items are not linearly connected, such as the knots of a string, but so that each, or most of them, extends their star-shaped connections, according to a reticular model. Navigating in a hypertext is to design a route in a network that can be as complex as you want, because each knot can contain a whole network.

Lamarca Puente, María Jesús (s / f). Hypertext: The new document concept in image culture. Http://www.hipertexto.info/documentos/hipertexto.htm

Digital reading gives the possibility of reading by establishing the most suitable route, to clarify the ideas through autonomous displacements that satisfy individual needs. The knowledge each person has is different and to accommodate new knowledge requires making their own combinations that are becoming more complex as you learn. The links to hypertext that digital reading proposes allow us to reconcile thinking with learning.

The authors tell us that reading consists of "understanding complex meanings" and these meanings are not on the sequential text we read but on the rational connection between the content, the context and the subjectivity of the author, among many other considerations. We can say that reading consists in the coordination of multiple associations to the past and to the future; the critical perception of the consequences in the immediate environment and in other dimensions. Complex meanings, then, are the expression that warns us that not always what we perceive at first sight is enough to know reality.

WHAT ARE INFORMATION AND COMMUNICATION TECHNOLOGIES?

Many classrooms have benefited from advances in technology, in those fortunate spaces where chalk dust is not breathed in because they have introduced information and communication technologies or at least use computers and projectors to present slideshows. The truth is that even more outside than inside schools, today's students know ICT and use them with skill to chat or have fun and learn many things, but without proper educational concern.

Rebeca Garzón defines ICT as "those tools that support various forms of social communication, which allows the finding, using and processing of information, incorporating new message formats, elements such as images,

sound and video, in addition to the text which facilitates the generation of knowledge. " (Page 36)

There are so many resources available at this time that we do not even know them and although new research in the field of education is emerging with favorable results, we still do not know how to use them in our local contexts in order to obtain systematic and lasting benefits. A huge majority of social actors are still not literate in technology and we face serious difficulties in learning, collaboration and training of the skills and ethics necessary for social and productive life.

ESSENTIAL SKILLS FOR LEARNING

Undoubtedly a new world order caught us by surprise. We could use as references of a new era Before the Internet and the triple WWW and after (A.I. www-D.I. www) to establish a new calendar in terms of knowledge management. The basic knowledge stored in memory to develop as individuals or as a society is no longer enough. The apprenticeships that are worthy are not those that distinguish some as "cultured" people, but those that are applied in a reflective way in the resolution of the obstacles presented daily to individual and social development, which include environmental problems, security, health, justice, etc.

This is why Garzón and Ramos tell us that **learning to read** is an essential tool for **learning to learn** in a permanent manner. "It is required that the searches that are carried out are reflexive, strategic, and supervised if possible during its development and its results are analyzed and evaluated in a critical way." (Page 37).

That does not mean staying in school for the rest of our lives, but developing our competences by relying on technologies, seeking answers to our doubts and learning to make responsible decisions based on our knowledge. Today's technologies democratize knowledge, that is, expand the spaces of knowledge diffusion.

Of course there are risks in the decontextualized and non-guided assimilation of technologies. The authors refer to two expressions used by Monereo: *Information shipwreck and informative intoxication*, which can equally be translated as informed ignorance since we can be filled with pieces of information without discrimination and strategies to make sense.

Garzón and Ramos stress:

... the importance of knowing how to read and write in a world permeated by technologies that provide unimaginable amounts of fragmented information that each person must interpret, assimilate, and incorporate into their knowledge and everyday life according to their needs. (P.29)

But if there is no more guide than the desire for entertainment or pleasure, the time spent on navigation could lead to isolation and loss of contact with reality. Before the risks of confusing educational priority with the unreflective use of ICT, Garzon and Ramos, following the approach of Monereo, point out in this book that "They require fundamental skills to be considered in the process of digital literacy, involving multiple literacies within institutions: to **re-learn to read, learn to communicate, collaborate and participate.** "(P.38)

Now, with the expansion of the new media in which audiovisual communication predominates, contents are disseminated that could hardly be recognized by educational institutions. We could say that now anyone produces "pseudo-educational" materials with the ease of having a computer and camera in hand. It is in these cases in which digital literacy becomes essential and broadly justifies the role of educational institutions as the means to, on the one hand, participate in the generation of documents validated by the academic community and, on the other hand, to educate society to learn to choose the most reliable sources of information.

The role of educational institutions is essential in the formation of social skills for critical access to sources of information, understanding and appropriate use of different languages, not just technological ones-for collaboration in the achievement of common objectives, negotiation, responsibility, to participate in public life, in order to learn in a network through acts of reflection, informed criticism, dialogue and creativity in solving the growing problems that afflict us.

LEARNING IN TECHNOLOGIES

The bet on digital literacy for the improvement of educational quality still has obstacles along the way. The digital divide, a concept that initially referred to the age groups - young and old - and the differences in the acceptance of ICT, revealed other gaps, especially in the poorer countries of the world and even worse, in the poorest and most remote communities: The socioeconomic, educational, connectivity, etc. gap. These and other gaps, or deep wounds, do not heal easily and we should not minimize them because they affect the majority of the world's population.

In contrast, despite all these gaps, ICT accelerates its progress in the daily lives of people, in schools, in public agencies, and in the street. Every day we are more familiar with them but we have not learned how to be responsible and use them safely, nor do we know how to use them to learn how to improve the quality of life.

ICT has entered our lives by acceptance and necessity with an uncontrollable impulse. Young generations do not have much interest in

learning from traditional practices and the older ones assume that young people just like to play. The authors found that a good game incorporates good cognitive principles that facilitate learning ... videogames also awaken abilities such as the ability to excel, visual dexterity and above all teamwork (p.40) .

It is necessary, then, to get rid of many prejudices and use the recreational resources to start closing some of those gaps that make social learning impossible.

DIGITAL LITERACY AND THE TRANSFORMATION OF READING

The authors tell us that literacy involves the mastery of reading and writing, as well as skills in other fields. The new concept of literacy is an extension of the original concept that branches and complements other literacies for the use of information and knowledge management: digital literacy, information literacy and technological literacy. I briefly state the definitions that the authors retrieve:

> "...it has been called digital when referring not only to the skills to use the Internet, but also to understand and use hypertextual documents."

> "Information literacy means knowing when and why information is needed, where to find it, and how to evaluate it, use it and communicate it ethically." (Gómez, 2005).

> "Finally, technological literacy refers to the ability to manage information technology ... it implies the basic knowledge of the tools of locating, retrieving and disseminating information." (Page 43)

Garzón and Ramos include several classifications that redefine the new skills that have to be developed through literacy.

For example, Bawen distinguishes - in a very broad review of the concept of literacy - three types of literacy: in the plural, and in each group specific domains of knowledge and performance. His perspective shows that in order to coexist with new technologies, the basic skills traditionally applied in the use of libraries and sources of information are required along with the new skills required for the use of digitized resources.

From Alfonso Gutierrez the idea of four transformations in literacy are presented:

- Recognizing diversity of texts, functions and purposes
- Recognition of the relationship between literacy and thought

- Recognition of similarity between writing and other forms of symbolic representation of communication
- Recognition of the social and collaborative nature of literacy

"This , say the authors, lays the foundation for reflection that not only requires specific skills or to learn about the world through technology but *to read the world* with new eyes, skills values and attitudes". (Page 47).

POLICIES ON EDUCATIONAL QUALITY RELATED TO ICT

Information and communication technologies have changed our daily lives and ways of interacting with the world. Educational institutions, and most notably Higher Education Institutions (HEIs), could not be the exception in this widespread movement. In response to the global dynamics and recommendations of international organizations such as UNESCO and ECLAC, development plans focused on improving quality by focusing on the innovation of capacity-building processes and the evaluation of results. This is to improve the relevance and equity of the educational service: adapt it to the needs of the economy and society, and expand opportunities for all people.

I will not enter the end of my participation in the confusion of defining globalization, but it has to be said that ICTs have had a preponderant role in establishing global links for trade development, the transfer of natural resources, the flow of labor force, cultural exchange and knowledge. Finally, with ICTs, there are global opportunities, but also global risks, which mainly affect the regions and groups of the most vulnerable. Consequently, there is an effort to align international, national, institutional, etc. policies to try to reduce the inequalities that are generated.

HEIs have tried to turn policies into actions to improve the quality of research, teaching, production and dissemination of knowledge. In order to adjust, they have had to install infrastructure, train teachers, bring students closer to new practices of use and understanding of uses to generate knowledge, new attitudes and new practices, increase the skills of graduates in the labor market, and the productivity of companies ... there is trial and error, but there is also permanent evaluation and lifelong learning that become continuous actions for improvement.

Through the authors we can know that in the UNACH the work started very early. In 2002 it reformed its educational model in order to integrate ICT's as strategic tools in the curricula, programs and subjects. No doubt much more resistance and obstacles will have to be faced, however, this digital book is an example of what they have achieved because in it we can appreciate:

- Collaborative and networked work among students, teachers and researchers
- The active roles of all participants in the generation of knowledge
- The application of very varied multimedia resources
- The interaction of various symbolic systems codes, languages, traditions, customs, ways of thinking ...)
- Complementarity of pedagogical knowledge of ICT's
- Understanding and inclusion of cultural diversity
- The connection with the public
- The satisfaction to show all of these skills in a digital book
- The experience of the New Technology Academic Unit, reading and digital editing of the Specialty in Reading-Writing Cultural Processes.

There is much to be said for presenting this digital book, for the richness of its contents, for what it represents in terms of quality for UNACH and for the impact on society. The interactive material it includes is a sample of how a book can:

- Use ICT creatively to inspire reading, to preserve the value of culture and to transform learning.
- Be inclusive by giving local people an important place in the global space.
- Articulate explanations of science and technology developments to make them navigate the experience and the human spirit
- Use conventional materials and resources alongside innovation
- Promote the interaction and the collaborative learning among professionals and with society

This digital book, presented to us by Dr. Rebeca Garzón Clemente and Jesús Abidán Ramos Salas, in an example of innovation that invites us to amicably seek strategies to improve reading comprehension and understanding of the world. I congratulate the creators, and I was very pleased to be one of the first guests to enjoy it and I wish it to be just the beginning of a long production.