AUTHORITIES:

UNIVERSIDAD CENTRAL DEL ECUADOR

FACULTY OF LETTERS AND EDUCATION SCIENCES

Ph.D. Fernando Sempértegui

Rector

Dra. María Augusta Espín

Academic Vice Chancellor

Dra. María Mercedes Gavilánez

Research, Doctorate program and Innovation Vice Chancellor

MSc. Marco Pozo Zumárraga

Administrative Vice Chanceller

Ph.D. Guillermo Terán Acosta

Dean of the Faculty of Philosophy, Letters and Education Sciences

Ph.D. Juan Carlos Cobos Velasco

Vice Dean of the Faculty of Philosophy, Letters and Education Sciences

Zip code: Av. Universitaria, Quito 170129

E-mail: decanato.fil@uce.edu.ec

Phone number: (+593) 2506-658 ext. 111 o 22904-760
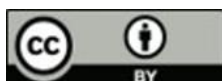
ROLE OF THE PARTICIPANTS

THE DIRECTOR/EDITORS
- To guarantee the quality of the journal.
- To exercise the legal representation of the journal in the absence of the Editorial Board coordinator.
- To appoint national and international scientific advisors.
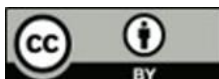- To check that the norms of publication are complied.
- To decide on the publication and dissemination of the articles.
- To propose the norms of publication.
- To apply objectivity criteria.
- To define the functions and duties of the rest of the editorial team.
- To supervise the work of the editorial team.Asegurar la calidad de la revista.

THE EDITORIAL BOARD
- To attend to the meetings (onsite or online) convened by the Coordinator of the Editorial Board or directors of the journal.
- To guarantee the publication and periodicity of publications.
- To maintain scientific and editorial quality criteria.
- To propose external reviewers.

ACADEMIC EDITOR
- To attend meetings convened by the Editorial board.
- To analyze the evolution of the journal.
- To propose improvement actions.
- To evaluate the scientific quality of the journal.
- To suggest external evaluators.Asistir a reuniones convocadas por el Consejo Editorial.

PROOFREADING AND STYLE EDITOR
- To monitor interactivity services with the reader (newsletter, comments on articles, forums, among others).
- To plan Information Services (directories, catalogues, journal portals, online library, categorization systems or basic core lists of national journals, among other information services).
- To plan the manuscript coverage for people with different disabilities.
- To monitor optimization

ASSOCIATE EDITOR
- To attend meetings convened by the Editorial Board.
- To ensure ethical aspects of the publication.
- To review the quality of the manuscripts.
- To develop research related to the improvement of the journal.
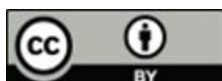
TECHNICAL TEAM
- To administer the platform for receiving and publishing articles.
- To check that the manuscript comply with the standards.
- To layout the publications.

PEER EVALUATOR TEAM
- To designate reviewers for each manuscript.
- To send the authors the results of the reviewer.
- To propose the authors improvements in the manuscript.
- To coordinate special issues of the journal.
- To evaluate the work in the shortest time possible.
- Guarantee the academic and scientific quality of the manuscript.
- To respond to the scientific requirements formulated by the Editorial Board.

THE EDITORIAL MANAGEMENT AND POLITICS

ABOUT US

La *Revista Cátedra,* which belongs to the Faculty of Philosophy, Letters and Education Sciences of Universidad Central del Ecuador has been a means of communication since 1992; the academic voice of the professors was expressed through the bulletins, whose relevant objective was to improve the educational quality based on their experience, wisdom and knowledge as professors forming other educators. On May 2018, Revista Cátedra reemerges as a space that creates and disseminates articles oriented to the improvement of the educational process and its linkage with society.

OBJECTIVE
To disseminate multidisciplinary scientific unpublished articles, elaborated under the parameters of the research methodology, written with academic rigor and based on the teaching practice.

TOPICS
The topics covered are the theoretical bases of the Education Sciences in its different specialties and levels of the educational system.

TARGET
The Revista Cétedra is directed to all the national and international researchers interested in publishing quality works that contribute to the improvement of the educational process.
From its origins, the Revista Céetdra was published in printed format. It is currently published in electronic format, using virtual environments to align to the needs of the revista s users and editors.

MISSION
The Revista Cétdra, of Universidad Central del Ecuador, Faculty of Philosophy, Letters and Education Sciences, disseminates scientific articles on diverse areas related to the Education Sciences, supported in the methodology of educational research and community service.

VISION
To be promoters in the publication of high quality scientific articles oriented by a research and from different areas of knowledge to constitute in the most prestigious reference in the comprehension and improvement of the educative process.

FOCUS AND SCOPE: Revista Cátedra has as theoretical bases the Education Sciences in its different specialties and levels of the educational system. It disseminates scientific-academic articles written under research parameters. It is open to national and international writers interested in contributing significantly to the solution of current educational problems.

8
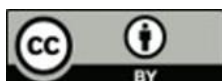
PERIODICITY
The Revista Cétdra has a quarterly frequency, and is published the first fifteen days of the first month of each period from January-April, May-August, September-December.

ARBITRATION SYSTEM
Revisión de doble ciego, mínimo dos revisores por artículo, con evaluadores externos.

DIGITAL PRESERVATION POLICY
The Revista Cétdra website provides access to all published articles throughout its history.

OPEN ACCESS POLICY
The *Revista Cétedra* provides open and free access to researches for the purpose of exchanging knowledge. The articles are published under the license of Creative Commons Attribution-NonCommercial-NoDerivs 4.0 Internacional (https://creativecommons.org/licenses/by-nc-nd/4.0/)

PLAGIARISM DETECTION
The journal uses the *URKUND* antiplagiarism system.

ETHICS CODE

Revista Cétdra adheres to the rules of the Committee on Publication Ethics (COPE) in [***https://publicationethics.org/***](https://publicationethics.org/)

Commitment of the authors

- **Originality of the manuscript:** the authors confirm that the manuscript has not been published before and contains no content similar to the one of other authors.

- **Simultaneous manuscripts:** the authors confirm that the manuscript has not been sent for its publication as an article of a congress, article of another journal, chapter of a book or any other similar publication.

- **Original sources:** The authors correctly provide the bibliographic sources used for the manuscript. The journal through the URKUND anti-plagiarism system will review the originality, if the article presents a lower matching level it will be accepted; otherwise, it will be rejected.

- **Authorship**: The authors of the articles guarantee the inclusion of people who have made substantial academic-scientific contributions to the manuscript. The journal accepts the order of authors in the article, once sent to review none modifications will be done.

- **Conflict of interest:** the authors who write in the journal have an obligation to point out that there are no conflicts of interest with entities related to the manuscripts.

- **Responsibility:** The authors are committed to do a review of the relevant and current scientific literature to extend perspectives, visions and horizons of the subject analyzed; they are also committed to make all the corrections sent by the reviewers and to comply with the submission process of the article.

Commitment of the reviewers

- **Role of the reviewers:** the evaluation process of articles is presented by blind revision to guarantee impartiality; reviewers are specialists in the topic and the authors will not know their identities. The reviewers issue academic criteria with ethics, transparency and knowledge in order to maintain the scientific quality of the journal.

- **Fulfillment of the expected deadlines and academic reserves:** it is necessary that the reviewers comply with the time assigned for the revision of the manuscript; the date of the results will be notified by the platform. Similarly, the designated reviewers will retain the confidentiality of the manuscript**.**
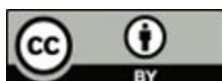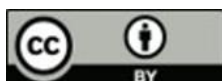
- **Objectivity:** The reviewers are obliged to provide enough reasons for their appraisals. They will deliver their report critically, following the corresponding review template.

- **Publicity of the articles and conflict of interest:** Once the final report of the reviewers has been issued, whose rank will be 17 as a minimum note and 20 as maximum, the authors, through the platform, will make the corresponding changes until obtaining 20/20. In this process, there will be a sense of reservation between the two parties, and will be referred to reviewers taking care that there is no mutual interest for any reason

Commitment of the editors

- **Publication criteria of articles:** editors will issue judgments of academic value, for this purpose they will request criteria from at least two national or international reviewers, and based on the reports the publication of articles shall be carried out. Articles will not remain accepted without publication.

- **Honesty:** Editors will evaluate manuscripts impartially; their report will be made on the basis of scientific merit of content, without discrimination.

- **Confidentiality:** Publishers and members of the editorial board are committed to keep confidentiality of manuscripts, authors and reviewers.

- **Time for publication:** The periodicity of the journal is quarterly; therefore, editors are the guarantors of the fulfillment of time limits for revisions and publication of accepted works.

Index

ARTICLES

Philosophy of education

Literature

Informatics

Education psychology

Educative investigation

Environmental education

The Cátedra Magazine is pleased to present volume two, number two in the electronic version. The theme developed has its theoretical bases in the Educational Sciences in their different specialties and educational levels; this is how some relevant aspects are presented, such as: Philosophy of Education, Literature, Computer Science, Psychology of Education, Educational Research and Environmental Education.

The contents exposed in this new issue are characterized by being elaborated under parameters of the methodology of the investigation. In addition, they are built with academic rigor and based on teaching practice.

The issue consists of six approved articles:

The first article, entitled *Change of the Cognitive matrix for the formation of the person in Ecuador*, by Aguilar-Gordón Floralba and Rosero-Guillén Julio. The manuscript reflects on the curriculum and the cognitive matrix of the educational model that currently guides Ecuadorian education, taking as a reference Gabierl Marcel's personalist vision. In addition, it proposes to reflect about the current education in Ecuador in function of the social requirements as a fundamental edge for the integral formation of the people.

The second article entitled *Perceptions about the concept of nation: diagnosis through the literary contribution of Juan León Mera and the decolonial proposal*, by the author of Viñamagua-Quezada Glenda. The manuscript reflects on the construction of the idea of nation from the exclusion of the other and on the decolonization as a way to counteract this thought. The contribution of this research lies in focusing on the theory of decolonization as an alternative to awaken critical consciousness towards the vindication in communion with otherness through literary and educational work.

The third article entitled *Accessibility analysis of the web portals of the educational institutions in Cuenca, Ecuador*, by Campoverde-Molina Miltón and Valverde Llorenç. The manuscript evaluates the accessibility of web portals with the Web Content Accessibility Guidelines (WCAG) 2.0 with a level of conformity A and analyses their regulatory compliance. Among the results, it is perceived that it is necessary to correct errors in all the analyzed web portals of the educational institutions of the city of Cuenca.

The fourth article entitled *Virtuousness profiles in school organizations in relation to psychological well-being levels in Ecuadorian adolescents*, by Unda-Villafuerte Fernando and

Lupano-Perugani María. The manuscript analyzes the relationship between perceived virtues in positive school organizations and levels of psychological well-being in adolescents; it establishes profiles of positive or virtuous school organizations considering, on the one hand, gender and type of funding and, on the other, the levels of psychological well-being present in Ecuadorian adolescents.

The fifth article, entitled *Methodological proposal as an alternative for the integration of knowledge*, by Aguilar-Gordón Floralba. The manuscript proposes to reflect on the methodological proposal as an alternative for qualification and as a way to integrate knowledge that allows for the integral formation of human beings; it explains in detail each of the stages of its constitution and analyzes its characteristics, contributions and structure.

The sixth article entitled *Innovative approaches of the environmental education with the use of urban organic residues*, by Yépez-Chávez Alisson and Viteri-Moya Fausto. The manuscript analyzes the need to strengthen environmental education in the educational field through the use of organic waste, which is seen as waste and a generator of environmental, economic and social problems.

Cátedra Magazine thanks all the authors and evaluators of the articles that have made the publication of this volume possible. It extends an invitation to the national and international academic community to present their research work related to the Educational Sciences in their different specialties and educational levels.

Director/Editors-in-Chief

Cambio de la matriz cognitiva como arista para la formación de la persona en el Ecuador

Change of the cognitive matrix for the formation of the person in Ecuador

Floralba Aguilar-Gordón

Universidad Politécnica Salesiana, Research group of Education Phylosophy (GIFE), Quito, Ecuador

faguilar@ups..edu.ec

https://orcid.org/0000-0002-9886-6878

Julio Rosero-Guillén

Universidad de San Buenaventura, Bogotá, Colombia

roserojulio@hotmail.com

https://orcid.org/0000-0003-4148-9239

Resumen

El presente artículo reflexiona acerca del currículo y la matriz cognitiva del modelo educativo que actualmente orienta a la educación ecuatoriana para lo cual toma como referencia la visión personalista de Gabriel Marcel. El documento se propone replantear las distintas dimensiones del quehacer educativo enfatizando en los principales postulados del personalismo que como corriente filosófica permite la revalorización del hombre y de la educación fomentando la centralidad de la persona frente a la formación pragmática, economicista y consumista que como finalidad última ha promulgado la sociedad actual. Este trabajo consta de tres partes: En la primera se analiza la visión antropológica que orienta a la educación ecuatoriana actual para lo que se toma como referencia algunos postulados expresados en el Plan Nacional del Buen Vivir 2013-2017 y del Plan Nacional de Desarrollo. Toda una vida 2017-2021 y diferentes postulados establecidos en la Constitución de la República del Ecuador del 2008, en la Ley Orgánica de Educación Superior y otras normativas relacionadas con la propuesta educativa. En la segunda parte se reflexiona sobre la propuesta personalista de Gabriel Marcel y sus implicaciones en el quehacer educativo ecuatoriano y en la formación integral del ser humano, teniendo como
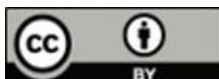
centro fundamental de desarrollo social a la persona. En la tercera parte, se analiza las ventajas y desventajas que trae consigo una propuesta antropológica personalista de educación integral en el Ecuador.

Palabras clave:
Currículo, educación, formación, Gabriel Marcel, personalismo.

Abstract
The present article reflects on the curriculum and cognitive matrix of the educational model that currently rules the Ecuadorian education, taking as reference the personalist vision of Gabriel Marcel. The document proposes to rethink the different dimensions of the educational activity emphasized in the main postulates of personalism that allows the revaluation of the man and of the education, promoting centrality of the individual versus pragmatic training, economist and consumerist, which as ultimate purpose has promulgated today's society. This work consists of three parts: the first analyzes the anthropological vision that guides current Ecuadorian education, taking as reference some postulates expressed in the National Plan for Good Living 2013-2017 and the National Development Plan. Toda una vida 2017-2021 with different postulates established in the Constitution of the Republic of Ecuador of 2008, in the Organic Law of Higher Education and other regulations related to the educational proposal. The second part reflects on Gabriel Marcel's personalist proposal and its implications in the Ecuadorian educational work and in the integral formation of the human being, having the person as fundamental center of social development. The third part analyses the advantages and disadvantages of an anthropological proposal for the integral education in Ecuador.

Keywords:
Curriculum, education, formation, Gabriel Marcel, personalism.

1. Introduction
This article proposes a reflection on the current education in Ecuador, and according to the social requirements it is considered necessary to make a change on the cognitive matrix as a fundamental edge for the integral formation of Ecuadorians. In this scenario, it is necessary to make a brief evaluation on the educational changes that have been made during the last twelve years, time in which no real changes have occurred due to the reluctant participation of teachers in the transformations proposed to the education project from the legal aspect, and due to the lack of updated programs to cope with the new educational proposals and their performance in the classroom. But regardless the reasons, it is necessary to be clear on the ultimate goal that education pursues and to walk towards achieving its fundamental objective: to change the way in which education is conceived in Ecuador, opting for the current formation of the human being as a person. It is necessary to find alternatives for one of the main problems evidenced in the educational dynamism: the rejection of the vertiginous unforeseen changes in the state policies that prevent the new proposals from being put into practice. In these twelve years of educational reforms, positive and negative aspects are found; thus, in Aguilar-Gordon (2017) it is observed that a negative aspect of Ecuadorian education was the weakening in the sense of national identity and lack of understanding of the multinational and intercultural nature of the country. Likewise, in Aguilar-Gordon (2019) some critical aspects are mentioned, such as:

> Generation of a rigid curriculum for Initial Education, Elementary school (EGB) and High school (BGU) that teachers must meet to achieve the development of established skills. High school has lost the horizon for which it was created, the students' exit profile is not ideal for subsequent linkage in higher education processes (Aguilar-Gordon, 2019, p. 22).

They have spent some years on executing this proposal and the results have not been positive, since the students who experienced this educational practice have had problems at the time of engaging in the various processes of higher education. High school has not provided the necessary tools for the development of the basic competencies in the student, aspect that has hindered their involvement in universities, generating new problems in the next educational level: high levels of repetition and dropout of the university population of the first years in the different careers offered by the higher institutes and the universities of the country. Additionally, it is found "the entrance examination of the students who finish high school (BGU) aspiring to start a university career" (Aguilar-Gordon, 2019, p. 22). It is a critical situation that causes that a large number of students do not pass the exam, or do not complete the score required for the career they want, or that they do not succeed in entering the University they want, increasing the ranks of unemployment by unleashing new social problems like the delinquency, drug addiction, etc. However, those who pass the exam are not exempt of problems, as some of these students are directed to universities in other provinces creating new conflicts of economic character, mobilization and separation from their homes.

The latter provides the distance between high school and university studies; decontextualized programs are evident at all educational levels; the demand for the use of ICTS without the adequate preparation of those involved and without the infrastructural adequacy of the institutions, aspects that increase inequality at all levels; common evaluation criteria to educational institutions without considering their modality, their specificity, their time of existence, etc. The following is found related to the same aspect:

> Programs are changed, teachers have better infrastructure to work with, but the learning process is not revolutionized. The requirement of the doctorate for university professors, when in the country there are no institutions that offer this type of studies. Requirement of doctoral programs with high levels of presence, without considering that the professionals should keep their work (in recent months this situation has changed). Degree validation of postgraduate studies according to listings with names of foreign universities chosen "for their international prestige" but that in fact some of them do not have the scientific and academic rigor necessary for the offer of this type of studies... (Aguilar-Gordon, 2019, p. 22-23).

The aforementioned are a few examples of what has happened in these 12 years in Ecuador, added to others like the university autonomy, the university democracy and other categories that disguised multiculturality, inclusion and multiculturalism that reflect the ideals of capitalism, mercantilism, bureaucratization of research and fragmentation of the educational system. In this twelve-year period, there is a clear absence of comprehensive training, stimulus and quality-indicator policies that allow the real personal and social growth of teachers and students in the educational system. It has been twelve years in which several educational processes that have stopped individual and social progress have been

violated, a clear example of this is the "mobility of teachers from the field to the city and abolition of educational institutions of Elementary education (or the First years of basic education) in rural areas or marginal areas with little student population" (Aguilar-Gordón, 2019, p. 23). The process of the so-called educational reordering that started in 2007 and has caused serious problems for the country has only begun to be analyzed in March 2019 by noticing its clear failure and the strong criticisms that have originated as a result of the empire of an "atomized, disarticulated and fragmented educational system in various educational offerings" (Aguilar-Gordon, 2019, p. 25). The Ecuadorian educational system demands serious proposals according to the new social dynamism and the real needs of the Ecuadorian subject.

In this context, this article proposes a change of cognitive matrix in order to improve the quality of Ecuadorian education. The idea to defend that guides the structure of this document is that the change of the cognitive matrix is governed by the conception of the person who is given to the education; in this sense, the Ecuadorian education should worry about training the person by strengthening the cognitive matrix that allows the rescue of the human being as such. It is important to make this change because the center of everything is the human being, everything comes and goes towards the human, and in this socio-historical sway, education must be rethought in a real sense. It is necessary to avoid the instruments of education by reducing the participation of the citizens of a country to the simple election of their rulers. Educational processes that contribute to the strengthening of free thought must be practiced and the positive transformation of society must be proposed from the pursuit of common well-being. For the deployment of the reflections bibliographic-deductive methodology will be used strengthened with the own approaches of the phenomenological-hermeneutic method.

This document is structured in three moments: the first topic: clarification of the current anthropological vision governing Ecuadorian education intended to make a clarification on the vision of the Ecuadorians at the educational level, from this are derived some relevant points such as: philosophical foundations of education in Ecuador from the reform of the 2014; Anthropological Foundation from the National Plan of Good Living 2013-2017; The National Development Plan 2017-2021. Toda una vida; The Organic Law on Intercultural bilingual education; and the Constitution of the Republic of Ecuador of 2008; possibility of constructivism and the generation of an integral educational proposal in the current context from the aforementioned documents. The systematic review of the aforementioned documents contributed to support the idea that education should be oriented to the integral formation of the human being to improve its quality, this would imply emphasizing in the equity, in the interculturality and in the so-called educational inclusion.

From the aforementioned arises the need to consider as a second topic the critical approach to the personalistic proposal of Gabriel Marcel. For this analysis, it is necessary to look to the approaches proposed by the personalism, especially in the guidelines of the philosopher pointed out, guidelines that give a basic and orderly structure to explain the meaning and the trajectory of the person in the current education. From the personalistic view considered as the transversal axis of this document, the following reflections are derived: philosophical approximation to French personalism; conception of the person from Gabriel Marcel (Me and you); the person as being in relation to the Constitution of an integral society. From these arguments it is necessary to emphasize that it is possible to build a society that encompasses the meaning and incidence of the term justice. It is a priority to

look back on the centrality that the person and the collectivity should have on economic, political, cultural, etc., which today accelerate and promote human objectification as they obey capitalist policies that from the realism of this current also called with the full extent of the term as *selfish* that degrade the human being. It is therefore conceived that this is the best way and a possible solution that is believed, giving the personalism in front of the contemporary facts with a view to the construction of a better society.

The last issue is about the advantages and disadvantages of a personalistic anthropological proposal in Ecuador. Each of the following sub-themes will be drawn from point-in-time reflections of what might be versus what education is in our country. In this way, it can be seen that one way or another contributes to continue working on improving the quality of education. Education in the philosophy of Gabriel Marcel; the relationship between personalism and education in Ecuador; a re-reading of personalistic thinking in the national plan of good living and in the so-called national development plan 2017-2021. A lifetime; the person as the central value of Ecuadorian education; the formulation of guidelines for a comprehensive education in Ecuador. With all these highlighted elements, a personalistic proposal of integral education in the country is revealed, in which some advantages and disadvantages are analyzed indirectly on which some guidelines could be established that would allow to create a truly holistic education in the country in order to improve educational quality.

2. Elucidation of the current anthropological vision governing the Ecuadorian education

Despite the various changes that education has undergone in Ecuador from the observed in the course of history, it can be emphasized that the country is anchored to a traditional, decontextualized and imposed education. It is an education in which when it comes to teach the knowledge, professors only dedicate themselves to fulfilling what is taught without going beyond their capacities, the human person is left to the side by only thinking in the productivity. It is an education that forgets the person as a relational whole. Therefore, this section is intended to make an approximation to the philosophical foundations that govern education in the country, considering necessary to carry out an analysis of the national curriculum of education that governs the Ecuadorian educational reality.

Some sub-themes are presented in in this chapter presented: 1) The analysis of the philosophical foundations of education in Ecuador taking as reference the curricular reform of 2014; 2) An anthropological foundation guided by the proposals that appear in the national plan of good living and the national development plan 2017-2021. Toda una vida; 3) Reflections that arise from the good living around constructivism; and finally, 4) provide arguments to originate a possible proposal for comprehensive education that presents the human being as a person in the Ecuadorian context.

2.1 Philosophical foundations of Education in Ecuador from the reform of 2014

There are various philosophical approaches – humanism, personalism, existentialism – in education, not only in Ecuador, but at the global level; however, each requiring to adopt certain ways of thinking. Everything can be valid, but it depends on the applicability that can be given when proposing to build a path to recognize the fundamentals that involve education in Ecuador, since the implementation of the educational curriculum designed in 2014 and that requires to accept that education should have as a principle:

> The integral formation of children; this implies the development of the different areas that allow to specify the three-dimensionality of the formation of the human being, i.e., the attitudinal, the cognitive and the psychomotor, with predominant emphasis in the attitudinal, since at this level it is essential to promote the practice of good habits and attitudes as a basis for the construction of principles and values that will enable them to develop as true human beings and properly configure the development of their personality, identity and trust (Ministry of Education, 2014, p. 17).

One of the strengths considered in the curriculum of education is that for its elaboration the current constructivism is emphasized with the intention that all the institutions apply this model to their students. In this way, according to Delval it is argued that constructivism raises the formation of knowledge "standing inside the subject" (Delval, 1997, p. 80). This means that the starting point is the human being as the center on which education is thought and all the efforts for its integral formation must be focused on this assumption.

The subject builds the knowledge of reality to the extent that it cannot be known in itself but through cognitive mechanisms that are available and that in turn, allow transformations of that same reality. In this way, knowledge is reached through the action on the reality, experimenting with situations and objects with the intention of transforming them. The cognitive mechanisms that allow access to knowledge are also developed throughout the subject's life. This way of proceeding is based on humanism that has its origins in ancient Greece where Socrates considered that "to know (the true wisdom) consists precisely in freeing of preconceived ideas and to try to describe them, [...] to direct the gaze towards the interior of man, towards human issues" (Dal Maschio, 2015, p. 32), and thus the concern for the human being in the Ecuadorian education is verified from the integral development as a citizen that deserves the best education.

In the preceding philosophical approaches, constructivism is not intended to fit, rather, it can be seen how it accommodates the current era. Nowadays, it is considered that knowledge is built as a vital fortress that has as a reference educating with their previous knowledge; thus, according to Guilar (2009) the task of the teacher is to help mediate what the child contributes from his/her prior relationship with the environment. The previous experimentation would help to strengthen the relationships established in the classroom and to form a critical thought as " pattern development of logical and coherent reasoning [...]intended to determine carefully and deliberately whether a judgement is accepted, rejected or suspended" (Castellano, 2007, p. 72). Constructivism promotes a more structured thought for each student as he/she advances in the learning process according to the evolutionary process. Cognition becomes stronger as the individual abstracts a greater knowledge background.

Among the weaknesses that can be highlighted in the curricular reform of 2014 are:

- The Ministry of Education in proposing this model of curriculum is not leaving room for creativity in the exercise of the subject, but he imposes a model to follow, which can be called as kind of educational dogmatism.

- That all teachers are not in the ability to apply this theory because many of them do not know what constructivism is. Most teachers continue to apply their traditional and banking model.

While it is argued that formal education presents a range of elements from which it is intended to teach theory in the classroom, this is reduced to a mere scientific narrative since teachers strive to teach reality through theories as presented in the text (dogmatism), this can be reinforced by what Colom says (2002):

> The deconstruction of modernity leads us to the deconstruction of the theory and the need to build a new educational knowledge; the construction of this new knowledge is practical, i.e., from the construction of the knowledge in the student (Colom, 2002, p. 188).

It is necessary to break with the vision that fragments true knowledge and precludes the activity of educating (Vivas Herrera, 2013, p. 237). The task of the teacher is to link the construction processes of the student with the collective knowledge culturally organized, and also to promote the critique with the purpose of being aware of the reality that happens, in addition to making possible the development of their potential. This implies that the role of the teacher is not only limited to create optimal conditions for the student, but must to orient and guide explicitly and deliberately this activity.

In the constructivist paradigm that manages the current curriculum, it is necessary to consider the educating as an active subject that knows, taking into account that it possesses knowledge and previous experiences that are validated in the formal education when it establishes that the Educating must know how to relate what you know and what is to know, depending on the stimuli offered by the educational environment and mainly the educator. In this interweaving between educator and education there is a meeting of human beings, people who anthropologically show respect for the other humanity, that is, a clear bidirectional relationship is shown that will be evident in the following Reflections.

2.2 Anthropological foundation from the national plan "Good living" 2013-2017 and the national development plan 2017-2021 "Toda una vida"

Immanuel Kant (2000) argues that *man through education can become a true man*, therefore, to achieve this purpose, educational work is a priority, so it must be planned in such a way that the main objective is to stimulate the autonomy of the educational subject. In this line, Rousseau (2008) argues that:

> There is always an external purpose to the child foreseen by the same nature, since those who are destined to think on helping him are not rational to suppose that they act manslaughter, but, on the contrary, they will propose immediately ends more or less ambitious of realization at the end of the attendance period, as well as immediate and circumstantial objectives induced in the facts and necessities of each moment. The nature of these purposes is already another problem (Rousseau, 2008, p. 120).

Education aims to condition by educating conformity as a social medium or a state doctrine. In this regard, the ultimate aim should not be to adapt the functions that would be fulfilled

in the social relations system, either in the role that is glimpsed in any system of private relations. Education does not have the function of making conscious citizens, good patriots or small fascists or communists; their mission is to awaken in humans the ability to live and engage as people in their current society. Man is not only polite, but his special biopsychosocial condition demands his humanization from education.

It must be clear that man is not pure rationality but with the "reason we build what is not possible in the action of our being in the world; what is possible in every moment" (Pérez de Laborda, 2000, p. 68). Reality is seen by the reason, i.e., the way things are. It is possible to observe the others from their humanity to contribute to the full development of their capacities. This idea contributes to the whole vision of the others, where it is accepted from the potentialities that it has as a human being, so that it has a good life that only in that I-you relationship fullness can occur. The search for common welfare is emphasized as outlined in the national plan of good living 2013-2017 under the slogan "All the Better World" (Senplades, 2017, p. 12) which was conceived as a plan envisaged for the building of capacities in the population and was somehow intended to reduce the social and territorial gaps to consolidate the democratic state, in order to empower human talent through comprehensive education processes, and to generate productive capacities through large investments in various areas of infrastructure and strategic sectors for the development. Likewise, in the national development plan 2017-2021. "Toda una vida" is proposed to "deepen, innovate, improve and include to take advantage of what has been achieved, and guarantee the full realization of the life projects, in conditions of equal opportunities, equity and social justice, celebrating diversities in a multinational and intercultural State" (Senplades, 2017, p. 12). Everything that is expressed is made possible in education through the relationship that arises between student and professor when one values the other from the previous knowledge since the mutual learning is a constant from the personal valuation of the other. From this perspective and since the last national development plan, it is argued that: "The center of development is the human being, and not the market or capital; reason for which solidarity raises to face individualism" (Senplades, 2017, p. 12).

2.3 Possibility of constructivism from the National Plan of the Good Living 2013-2017 and National Development Plan "Toda una vida"

There are no express ideas about constructivism in the national plan of good living 2013-2017; however, based on the exposed approaches on constructivism it is feasible to present a key thought in the PNBV, then the "good living [...]offers alternatives to build a more fair society, in which the center of public action is the human being and life" (Senplades, 2013, p. 22); from this idea, it is possible to propose that the center of education is man as 'being' for society, the center of life, who is able through skills acquired in education to make society. Thus, the character of sociability that only the human being possesses is emphasized.

Additionally, it is stated that good living is encompassed from the Quichua thought of Sumak Kawsay, a "mobilizing idea that offers alternatives to the contemporary problems of humanity" (Senplades, 2013, p. 23). Proposal that builds solidarity societies, but that this cannot be done but from education. It is thought that the Sumak Kawsay is embracing from a perspective that bets on inclusiveness, where all Ecuadorians can exercise their rights and obligations from the respect of national identities.

It is possible to say that good living is strengthened from those values that drive the human being to reach the maximum possible, i.e., to obtain a comprehensive formation as it was

presented in ancient Greece for the attainment of the common good and the individual happiness; all this cannot be given from selfishness, rather, it is a work that is done through education, where the other (the student) is very valuable because not only is the future of society, but because the knowledge shared aims to bring out the knowledge the person possesses. The person is a 'being' that builds himself/herself (knowledge) and contributes to the construction of a better society.

From the national development plan 2017-2021 "Toda una vida", there are no explicit aspects of constructivist theory, but educational processes are seen as a lifelong learning right and promotes the "development of personal competencies for resilience, capacity of decision, autonomy, realization, development opportunities, among others" (Senplades, 2017, p. 49), which can infer constructivist processes that consider that the basis of social development derives exclusively from education.

2.4 Possibility of an integral educational proposal in the current context

It is necessary to revise the ten-year education plan from 2006 to 2015, which presents the general objective that establishes "to ensure the quality of national education with equity, intercultural and inclusive vision from a focus of rights and duties to strengthen citizen training and unity in the diversity of the Ecuadorian society" (Ministry of Education, 2006:14), this may mean one thing: that education should be oriented to the integral formation of the human being to improve the quality, which would imply emphasizing equity, multiculturality and inclusiveness.

If the ten-year plan's proposal focuses on inclusion, attention to diversity, strengthening of citizenship, this would imply a joint work with educational institutions to make this objective a reality and not just a sociological narrative, since it is decided to observe the application that may have the ten-year plan and the fulfillment of the proposed objectives. However, all this is not achieved from the proposal of an entity, but a teamwork where both micro and macro institutions contribute to improve the quality of education in the country. Minorities need to be taken into account in order to know the reality of non-urban institutions so that no one is excluded.

Consider for a moment to develop a proposal that links the ten-year plan with Constructivism and Personalism, i.e., that from the ten-year plan it opens step to accommodate constructivism, but from a broad and correct view of what constructivism means. According to Coll, this term becomes "a category where different psychological currents are integrated, which focus on the activity of the subject" (Coll, 1996, p. 155). By unifying these three elements, the comprehensive education proposal is evidenced because:

> The learning of knowledge and the formation of cultures included in the school curriculum can only be a source of personal development for the students as long as they simultaneously strengthen the process of building personal identity and the process of socialization, i.e., to the extent that it helps them to situate themselves individually in an active, constructive and critical way in the social context and culture of which they are part of (Coll, 1996, p. 170).

It is verified that a proposal of integral education is possible by unifying what is wanted to be achieved with a ten-year plan, clarifying the meaning of constructivism for a correct application and the objectification of humanization of the human being seen as a personal *being* open to the other in search of the common good and in projection to the personal
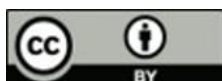
development in the social and cultural context of which he/she is part. This can also be understood from the Bentham´s utilitarian thought (1839) who argues that "for the achievement of the social objective, an interest in the individual must be created or promoted that serves as motivation so that its behavior tends to the greater social happiness"(p. 60) while seeking individual happiness.

Elucidating the specific axes that govern the structure of this educational strategy that is part of the Ecuadorian education, it is necessary to continue with the review of the personalism as a philosophical current that will serve to establish an anthropological Education proposal whose specific aspects are considered below.

3. Critical approach to the personalistic proposal of Gabriel Marcel

The complexity of the wiles in which we are surrounded by the instrumentalist society that governs in our days requires the revision and confrontation of these technical specificities that are *at hand* -which objectively unify human traits- with the position that the person should have about the progress that so far governs ideologies: social, political, economic and cultural contemporary. It is therefore necessary to rediscover and recover the ontological position that the person must have in the times that are not exempt of influence in the Ecuadorian society. For this pretentious analysis, it is advisable to look at the approaches proposed by the personalism of Gabriel Marcel that provide a basic and orderly structure to base the sense and trajectory of the person in the current Ecuadorian education.

3.1 Philosophical approximation to French personalism

One of the most daring and influential currents that have been built throughout contemporary philosophy is the personalistic "school", proposing a critical review of the manipulation that social advents make of man; reality that manifests itself and remains in force in the circumstantial observances of our days. In relation to this, Burgos (2012) says:

> Personalism emerged in the European context as a collective response movement to a complex set of social, cultural and philosophical issues: the rise of individualism and collectivism... The arrogance of a scientific materialism... A strong crisis of knowledge, crisis of values, dechristianization, etc (Burgos, 2012, p. 5).

This approach goes from a consideration of the socio, economic and cultural processes as adverse to a central assessment of the human person, which is presented to this *human being* as paramount, obtaining the privilege of dignity that as a person is his/her responsibility. There is a predominance of conceptions that obeys complex constructs that make the human being a 'condemned' entity to obey. It is insisted under this previous assessment that the personalism as a philosophical perspective is built as a basic and necessary set for the recovery of the ontological position of the human being, since its *commitment* with the society in view of that in the words of Marcel (1987) "The contemporary period is characterized by something that should be called the exorbitantness of the idea of function... Vital functions and social functions" (Marcel, 1987, p. 23); proposition that gives an account of the paradigm shift, i.e., that the human and collective function (in current words) is to produce, to capitalize on reality, change that should be reformed from an evaluative, constructive social function of the dignified and integral human being, without reifying the human nature. It should be emphasized that the personalism as *reorienter* and *recoveree* of the centrality of the person, does not exhaust itself in the complexity of its word, i.e.:

> Personalism encompasses various nuclei united by a common tendency... The most general feature of personalism is its insistence on the reality and value of the person... If I try to explain the reality from this point of view, hostile to naturalistic interpretations... It would affirm human freedom and the foundation of reality (Marías, 1980, p. 162).

From this specification, personalism by being a current that makes emphasis on the centrality of the person, it turns over a realistic conception of the human nature, pretending to restore and to recover the order and the status that human beings must occupy at the everyday events. Without the slightest idea of assuming an epistemological position, it can be said that *the measure of things must be the person*, free and responsible, where the aspects that arise from the contiguous reality are at the service of man and not vice versa.

From these elucidations, a clear idea has been structured to understand that the European personalism is founded in the search and in the reconsideration of the ontological position of the person compared to the *social factum*. All this is an opportunity to reflect on this aspect, because it emphasizes the inevitable valuation of the person like a being who seeks emancipation, i.e., not mediated by purposes that is not the same as *being a person*. Based on this judgement that this current founded, it is ratified the promotion that the human person cannot be reduced to any reifying aspect by reality, given that the personalism according to Burgos (2012) should not be alienated by the various scenarios that the person has established in the world, given that the person is essentially different and superior to animals and things. This is the specific revaluation surrounded by the interstices built by society itself, and that in turn, the person should not be in the midst of it, whose differentiated task is to transcend these aspects in view of that as mentioned, the human person should not be reduced to being treated as an animal, thing, or any other aspect that infringes his/her own human nature. The ontologically understood human being must be valued as a fundamental being in the face of any established social construct.

From this perspective, it is considered pertinent to propose a brief revision of the conception of person from one of the representatives of personalism, recalling that this philosophical doctrine seeks the centrality of the person to legitimize his/her constructs and to promote the aim of this manuscript.

3.2   Conception of the person from the personalism of Gabriel Marcel (Me-You)

As mentioned, the personalism aims to reorient the conception of the person from her/her value and centrality that should keep in front of each social conquest. It can be characterized one of the essential aspects that comprises the philosophy of Marcel, whose reference given by person is linked with the *construction*, which according to Urbayen (1997) opposes the Cartesian guidelines, not polarized like *res cogitans* and *res extensa* but formulated in the following way: "Man is an incarnated being... It is a being in the world, and its being in the world is possible because it is a corporeal being" (Urbayen, 1997, p. 331).

Urbayen (1997) defends the main position that the person must have as a *being open* to things, and at the same time emancipated from that reality. Nevertheless, the sequence of this referential-existential conception of being requires the clarification and complementation of it, by means of a specific nucleus, being this *the other*, the you, that like the corporeity, it melts a space of encounter with the other. In this perspective, this conjecture is mentioned from this philosopher:

> I exist; this means that I have to make myself known, be it for another, whether by myself as it affects me to go about a borrowed alterity; and everything is not separated from the fact that there is my body. This body belongs to me, but it is not my body but the spirit that is given to me; the body has the dignity it deserves by virtue of being created by a superior you (Marcel, 1957, p. 227).

In this complex consideration, it is expressed the eagerness of recognition, and also the need of the other where the integral human person can *be, be made and built* as a whole person. It is also important to emphasize that the person does not relegate to the objectification as a means for a particular purpose, but that it identifies itself as a corporeal being, embodied and directed to the discovery of oneself and with what has been given as denomination, you.

In short, the recovery of the existence, of the status and in particular of the integrity of the human person is one of the specific postulates of Marcel, where the person is not conceived – worth the redundancy- as means of which it is available for some purpose but as sole subject provided of an existence and an essence that makes it a person capable of building order, meaning and building its trajectory in the complexity of the contemporary world in which it is inserted.

3.3   The person as being in relation to the constitution of an integral society

The proposals set out earlier by the personalism and more specifically from Marcel fall on a declarative inspiration about the development of the person, together with their influence for the social individuals. Not so, it is thought that this sociological-ontological influence that comes from the re-conception of the human person, promotes the construction, not only of specific individualities but also that it contributes to the development and the construction of an integral society , understanding by this objection the achievement of a society that integrates the great diversity of human expressions such as solidarity, the recognition of the self and the other, the emancipation of idiosyncrasies related to the postulation of the human being as a non-thinking entity , etc., in such a way that the building of a world balanced by community ideologies is reached, at the service of the human being and the collectivity as the sole purpose. In this reflective line, it is opportune to emphasize the position of Urbayen (1997) who from the analyses that are made in relation to the Instrumentalist Society maintains that:

> Man is conceived as a machine, as a mechanism and not as a spiritual being... This conception promoted by the technical development and by the primacy of the productive categories, attentive to a direct form against the integrity of the person and impedes its complete development (Urbayen, 1997, pp. 333-334).

It is possible to see that this aspect remains in force in the face of the great multiplicity of factors that make up human singularity. In this context, it is appropriate to clarify that according to the contemporary technical and technological boom, the proposal of the centrality of the person does not converge against the technique and its progress, but in what the technique and its variants make of the person; then, from the conception of man, this corporeal unity would be nullified by these exempted implications.

The current advances in technology have placed man as a spectator, there is no action, he has become a passive being that only receives. There is little vision of the future, entrepreneurship perspective, among others. Following these problems, it is urgent to

rethink the directionality of education in Ecuador, since it is not possible to let the whole society go adrift; hence, there are serious consequences if a more critical, conscious thought is not promoted; thought that is able to provoke changes to seek common well-being. It is necessary to generate commitments for the human person. However, once exposed the current problem of the capitalist system of the world today, it is thought necessary and paramount to look back on the proposals that from the personalism conceived, it presents a revaluation of the person in front of the world. From this position, it would be worth pointing out that for the objective intended, it is a condition 'sine qua non', recognize that "the person is a being able to collect, to penetrate inside, and this characteristic is the one that highlights the clearest way according to Marcel, that the person is a being able to transcend" (Marcel, 1957, p. 330).

It is important to question what are the only aspects believed to account for the recovery of the integrity and dignity of the person, and of these same social virtues. Therefore, at this point it is pertinent to express what is thought by the achievement of an integral society conceived as:

> Society must lead to the unity of its members, not by instrumentalist zeal, but by an eagerness to achieve... an understanding and also the social attitude aimed at empowering the weakest... in a world of inequality, only policies that favor equal opportunities have legitimacy (Arenas & Fernandez, 2015, p. 116).

It is possible to pose these ideas so that they can cope with the social problems that occur. It is possible to understand that unity provides equality of opportunity as something legitimate and proper of the human person, which must be conceived in an integral way, not defined by technical progress but by the unconditional centrality that occupies the world. In addition, there is a desire to recognize each in the *other* through the attainment of democratic policies as they favor and account for the participation and recognition of otherness.

Concluding, it is necessary to emphasize that it is possible to seek a society that encompasses the great significance and incidence of the term justice; it is an elementary priority to turn the gaze on the centrality of the person and the collectivity in the economic, political, cultural, etc., which today accelerate and promote human objectification as they obey capitalist policies that from the realism of this current can be called as 'selfish' that degrade the human being. It is conceived that the personalism and its proposals become an alternative solution to the contemporary facts with a view to the construction of a better society. Hence, it is necessary to establish a specific comparison of these approaches conceived as a requisite for an anthropological proposal for education in Ecuador in conjunction with the "model" of education that currently governs the Ecuadorian educational practices.

4. Comparison (advantages and disadvantages) of a personalistic anthropological proposal in Ecuador

This last sub-topic is ambitious since it seeks to compare two elements that are not present in the national curriculum and that as a proposal can cause reflection in different social actors. Mounier (2007) defended the idea that every person should be committed to *others*, that all human beings must work as a whole and collectively. In addition, human beings from their personal individuality should be directed towards the pursuit of common well-being.

What happens in the Ecuadorian social context is not different to the same Ecuadorians, alternatives of solution must be sought to improve the educational quality at micro and macro level, in the rural and urban areas, so that all the human beings reach the personal development to be expected. Each of the following sub-themes will be elaborated from reflections of what could be versus what is education in our country, in this way there are glimpses of advantages and disadvantages that in one way or another contribute to continue working with a view to improving the quality of education. It is necessary to understand that the quality of education cannot be improved only from the theoretical proposals but from the reality of the subject, having as center the student, his/her person and dignity as a human being, because only from here it is possible to transcend the conflicting frontiers posed by postmodernity. Subsequently, it will be proceeded to make an approach to the education in the personalist thinking of Gabriel Marcel.

4.1   Education in the philosophy of Gabriel Marcel

This author presents enriching reflections at the educational level because he proposes the integrity of the other. In his work the *mystery of being*, Marcel proposes a recognition for the other that in this case could be conceived as the student in front of the teacher and whose presence does not make the teacher as a mere spectator but a *being concerned to help the other* to deploy all the potentials in order to transcend the social spheres translated into the search for the common good that "it is not about the strangeness that an observer may experience that will check it from the outside, but is felt inwardly by someone who recognizes this situation as his own" (Marcel, 1964, p. 165), hence, the interest of the teacher to ensure that their students have a better education than they had, thus reaching the integral formation of their personal *being*.

This meeting between student and educator is presented as a mystery "something in which I am committed myself" (Marcel, 1964, p. 171) and the educator cannot get rid of that responsibility, in the same way the educating must accept the guide that It means the educator for him because he seeks to reach a higher degree of personal dignity, development in all fields of life. The educating shows a commitment because it accepts the other the necessary guide to become what it proposes to be, always aiming at the maximum good. It is noted that the commitment is mutual and in this way:

> The person is in the self to perform. That unity, radical and incommunicable which is the person, performs itself through the complexity of living. And living is living with things, with others and with ourselves. This 'with' is not simple juxtaposition of person and life: 'with' is one of the ontological characters of the person as such, and, in his/her virtue, the life of every human being is constitutively personal (Zubiri, 1983, p. 48).

Zubiri corroborates what was said by Marcel, then the human being seen as a person must be prepared to live, but cannot be prepared only because he/she would return to be an animal, though rational. The concept of person is broader because it discards the ancient vision of the human being as a rational animal because the human being is not an animal but a person who lived and makes society, makes community. The animal can be abandoned but the man from his/her personal being cannot be left abandoned. Therefore, the task of the educator is to dedicate his efforts to the integral education of the person with a view to his realization in the world, for his *me* and the *you*, thus forming a *us*. In defense of the personalism, there is no place more apt to corroborate its application rather than in relation to the education.

4.2 Relationship between personalism and education in Ecuador

It is clear that the concept of good living could be reformulated from the linkage with the personalism; however, there are certain guidelines that are oriented to the maintenance of the traditional conception as it is the scientific narratives that prevail in the time of teaching and technical procedures, in which teachers are lost in order to comply with the right way of teaching proposed from the Ministry of Education. Now, it is specified what is sought in the education of Ecuador, as is explained in article 26 of the Constitution of the Republic of 2008, which recognizes education as:

> A right that people exercise throughout their lives and an inescapable and inexcusable duty of the state. It constitutes a priority area of public policy and state investment, guarantee of equality and social inclusion and essential condition for good living. People, families and society have the right and responsibility to participate in the educational process (Constitution of Ecuador, 2008, Art. 26).

Therefore, it is established that education is intended for the person throughout his/her life because it is inserted in a social environment; this education should be oriented towards the achievement of good living, the guiding principle of any educational project. All Ecuadorians have the right to participate in the educational process; therefore, it is observed that the notion of personalism where everyone is responsible, as a community, to offer all the means necessary for human beings to improve. Another approach is established in article 27 of the Constitution of the Republic of Ecuador of 2008, in which is stated that:

> Education must be human-centered and will ensure its holistic development [...]; it will be participative, obligatory, intercultural, democratic, inclusive and diverse, of quality and solidarity; it will promote gender equity, justice, solidarity and peace; it will stimulate critical sense, [...] individual and community initiative, and the development of competencies and capacities to create and work. Education is indispensable for the knowledge, the exercise of rights [...], and it constitutes a strategic axis for national development (Constitution of Ecuador, 2008, Art. 27).

All Ecuadorians are part of promoting an education centered on the human being and in the person, in such a way that it promotes a holistic, integrated and integral development from the recognition of the *other*, not only of the person but of the nature, because man (being personal) can give the degree of dignity that corresponds to the nature to respect, care for and not destroy it, making a conscious use of the resources it offers. Likewise, they are all aware of their democratic participation, attachment to justice, solidarity and peace, but none of these values can be fully lived when the personal dignity of the other is not recognized. If education is indispensable to knowledge, exercise of rights and construction of a sovereign country, then the state is the one who should promote the recognition of the person from their inviolable dignity, as it is. Awareness of the recognition of the dignity of the 'other' cannot only be written but it must be a reality from the daily exercise of the experience of true personal values. In the next section, the current that has been proposed as a guiding thread for the execution of this work will be presented with the national plan of good living 2013-2017 and with the national development plan 2017-202 "Toda una vida" proposed by our country.

4.3 Reading of the personalistic thinking in the national plan of good living 2013-2017 and in the national development plan 2017-2021 "Toda una vida"

Previously there were two central ideas that appear in the national plan of the good living 2013-2017, from there it is possible to make a reading of the personalistic thought, although it is not a way to open to other reflections that the authors of this article can contribute. The national plan of the good living 2013-2017 and the national development plan 2017-2021 "Toda una vida" establish that all Ecuadorians must develop their capacities because the center of education is the human being; then, it is necessary to determine operational mechanisms that make reality what is stipulated in article 343 of the Constitution of the Republic of Ecuador of 2008 which states that:

> The National education system will aim at the development of individual and collective capacities and potentialities of the population that enable learning, and the generation and utilization of knowledge, techniques, skills, arts and culture. The system will focus on the learning subject and will work flexibly and dynamically, inclusively, efficiently and efficiently. The national education system will integrate an intercultural vision according to the geographical, cultural and linguistic diversity of the country, and with respect for the rights of the communities, people and nationalities (Constitution of Ecuador, 2008, Art. 343).

The good living and "Toda una vida" plans contribute to the achievement of the personal fulfillment of all Ecuadorians; however, it is necessary to change the way in which education in Ecuador is conceived, with a view to achieving the development of the individual and collective capacities and potentialities of the population. It is necessary to change the cognitive matrix to transform the current Ecuadorian society; it is necessary to revolutionize the thinking about the specific needs of Ecuadorians by modifying the teaching and learning processes that generate analytical and critical subjects that will emerge in pursuit of their individual and social project in which the relationship of the *self* in front of *you* is presented and in which two subjects are involved. In this way, a mutual recognition is profiled for the construction of a new society from the concrete situation, in which each one is located, emphasizing the notion of multiculturalism according to the geographical, cultural and linguistic diversity of the country. All of the above will help to appropriate the typical situations and problems of Ecuadorians. The Ecuadorian educational project must aim at the harmonious fusion of theory and praxis, of subjectivity and of reality, it should be oriented towards the search for an "articulation of the vital and the spiritual" (Marcel, 1964, p. 93) for the care of the common good, understanding it from personal spheres to those that involve nature for the respect and care of *others*.

From the conception of the Sumak Kawsay on which the good life has been proposed, it can be considered that the personalism is shown and in both cases what is sought is to give solutions to the problems of the contemporary society. Personalism sees every human being as a binding part of a community (Marcel, 1964); it is a person who seeks the common good and in that search also thinks on himself/herself. For its part, the good living aims to achieve the integral development of all Ecuadorians and is thought as a gear where everyone should contribute to the search for solutions to the social problems that occur nowadays (Senplades, 2013). In the same way, "Toda una vida" is proposed to achieve a holistic and integrative vision so that no one, throughout his/her life, is left behind (Senplades, 2017). In the normative corpus analyzed by means of the selection of the articles established in the Constitution, as well as in the national development plan of the good living 2013-2017 and

in the national development plan 2017-2021"Toda una vida", there are personalistic approaches that invoke the need to achieve greater equity and social justice, promulgate the expansion of productive capacities, the strengthening of human talent, the integral development in a context that project the people towards a common horizon where the rights for all are guaranteed during their life, taking into account the diversity of contexts, typical problems and situations to the particular individual and of his/her different manifestations and organizational expressions.

In this scenario, it is possible to observe the point of encounter between Personalism, Constitution 2008, Good living and "Toda una vida". They are oriented towards the search for the integral aspect of the human being, towards the respect of their rights as people, the fight against selfishness as an element that destroys and avoids the construction of a more just, equitable, harmonious and peaceful society. All situate human beings and nature in the center of management, prioritize equal recognition of human rights and intend to ensure their fulfillment to build a society motivated by diversity and harmonic relationships with a view to achieving a better social and political coexistence. From this perspective, all Ecuadorians are in the obligation to think critically and as a team to have the country they want where everyone can 'live' better.

4.4   The person as the central value of the Ecuadorian education

In the last twelve years, it has been shown that education is a priority in Ecuador, but it is necessary to make real changes in its fundamental management and implementation policies. It is essential to rethink the basic general education proposals of High School; it is necessary to rethink the undergraduate and postgraduate projects offered by the institutions of higher education, taking as a fundamental center the reflections and the actions of the person in his/her contextual reality. University megaprojects have been built with a view to offering new products (knowledge); millions of dollars have been invested in infrastructure, in the construction of educational institutions, in hiring teachers, scientists and researchers that would contribute to the improvement of education, but in reality behind these projects great plans and programs have been designed that protect and camouflage wastefulness, corruption and excessive dishonesty, aspects that have staggered the meaning and ultimate purpose of education.

Ecuador demands a different thinking with ethical, political and socially well-formed human beings. Fully and integrally formed human beings that foster a true quality education. In the country, it is not enough to create programs of educational updating, it is necessary to promote the development of the conscience and of a critical and constructive thought that promotes the personal and social fulfillment; it is necessary for everyone to be responsible to modify their mental structures and to achieve social transformations. Society requires the involvement of all, and at the educational level it is imperative that there be full awareness that the current context requires new ways of teaching and new ways of learning to be answered without forgetting that the purpose must be fixed on human development "without separating the spiritual from the vital" (Marcel, 1964, p. 171). In the current Ecuadorian society, a diversity of actions and attitudes is observed, it is opted for a voluntarism, emphasizing the educational selfishness in all the levels under the slogan nobody loses and all pass without considering the learning degree and/or the level of knowledge. The risk to lose the place of work, the innumerable reports and the additional work deployed in the different opportunities of pedagogical recovery, of reception of new tests, of design of questionnaires, of planning extraordinary tasks, etc., force the teacher to fall into the system that promotes the promotion of the student who is voided of cognitive, procedural and attitudinal aspects. Currently, the role of the teacher has been distorted,

even is legally unprotected by the Ecuadorian legislation. It is necessary to revalorize the teacher (in its fair measure) and to strengthen the educational processes considering that education is the same engine of social development, but to achieve this it is necessary to reorient the educational policies, to rethink the role of the family and to work cooperatively and collaboratively in order to build an alternative society that values the individual and worries about the common good.

Consider the ruling that appears in the Constitution of the Republic (2008) that "education will focus on the human being and will ensure its holistic development" (Constitution of Ecuador, 2008, Art. 27), this idea is reconsidered because it is essential to insist on the holistic development of all Ecuadorians where individual and community initiative is boosted, and the development of competencies, skills, critical sense and capacities to create and work is framed in an altruistic thought. It is necessary to recognize the Ecuadorian in its personal *being* in the different instances in which he/she develops, from all the nationalities that exist in the country, languages and forms of being that are manifested. This is part of the valuation of the communities and individualities that make up the identity of the Ecuadorian, none of this would be possible if one does not recognize the other. From that position it is recognized that:

> The person is not the most wonderful object in the world, an object that we would know from the outside, as observers, among other things because 'I am not a mere spectator', repeated by Marcel again and again in his works: I do not want to be a spectator who is not committed to the people and with the world (the circumstance) that surrounds him/her. The person is,... the only reality that we know and that at the same time we do from the inside (Mounier, 1983, pp. 22-23).

Even though it is true that the center of education in Ecuador is the human being, in recent times it is essential to carry out a revaluation of the subjects immersed in these processes especially in the teacher. From the personal conception, the person carries a unique valuation that corresponds to his/her personal dignity, for this reason all the efforts in educational subject are oriented to the holistic and integral formation of the person to give answer in each of the areas: biological, social, political, economic, cultural, religious, among others. It is essential not to forget that in education this intimate link established from the pedagogical relationship I-you must be conceived with a view to personal fulfillment.

4.5   Creation of guidelines for a comprehensive education in Ecuador

The integral education of the person has an important place in the current society by the emergency that denotes the loss of moral values. The primacy of the voluntarism has led to the establishment of a weakening of the vision of the human being, it is no longer conceived as *that* someone who should be given the necessary attention to the development of his/her potentialities and turns his/her gaze towards nature; the love for animals arises, nature, all this joined to the *extremes*; before it was thought on the man and now it is thought about the animals and in some cases about the nature, all are reductionisms that cause declines of certain conceptions founded on the existence of humanity.

Because of the problematic arisen, it is necessary to focus the education of Ecuador to give priority to the person and to fulfill the holistic development, for that reason as well as UNESCO, the necessity to educate in the *being* is emphasized, as well as in knowing and doing. This

triad will govern the following guidelines:

- **Know how to be a person.** This implies awareness of *who you are*, a situation that cannot be given from individuality but from the collectivity, where I meet *another* person who like *me* is recognized in me, thus forming a *us*. It could be said that from the recognition of the *other* I can realize how important it is to *me* and tell the person: *your life is important to me* and vice versa. Only in this way it is possible to achieve the integral education of the person and a better life (good living) (Morin, 1999).

- **Knowing the other.** In this guideline is intended to avoid selfishness, objectivity, relativism, objectification. It raises the possibility of knowing the other as it is and that he/she knows me in the same way, naked, with the flaws I have, with the human fragility I possess. To be empathetic to understand the reality of the other, because you cannot judge from outside but from the interior where you can live *the other* and know oneself from that experience. The *other* is presented not only as a *you* equal to *me* but also as the surrounding nature where this relationship of the *us* is established (Morin, 1999).
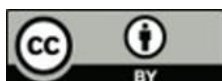
- **Know how to work for the achievement of the common good.** The interiorization of values cannot be given to me alone but to the collectivity, but this collectivity from the personalism is not seen as such, but it occupies a more comprehensive notion: community. This community is formed by people, personal beings that are recognized in their individuality but who are conscious that the community is paramount, because without the others it could not give a life to fullness and it would never attain the personal fulfillment. Only in community is transcendence possible. The person is a donation and this is done in the community the person belongs to, because he/she is not selfish but is a person who loves and values others, hence he/she can do everything he/she can for the community aiming at the best possible (Morin, 1999).

These three realities are the focus of work to carry out the holistic education established in Ecuador, an education that demands the change of the cognitive matrix as main reference to achieve the change and the necessary transformation of the person. It is important to consider that the starting point for the construction and the social change begins with the way of thinking that can be generated in the people, and that reflects the fullness of the human being, the conscience of individual and social change and that promote the understanding of the being as something that is built, as a being that is a project.

5. Conclusions

It is necessary to change the cognitive matrix to achieve a quality and contextualized education, in this sense, it can be said that education in Ecuador goes through a good time for its reorientation, and many efforts have been devoted to improve its quality but it is still a long way to go beyond the scientific narrative in which it has been in. It is necessary to break the traditional paradigms and redirect it from and to respond to the needs of the context.

One of the main referents for the transformation is to consider the personalistic postulates inviting to value the person as the center and end of any educational, political and social process. Moreover, it is necessary to rethink the sense and meaning of constructivism with a view to improving the quality of education, as well as to rethink the purpose of the current Ecuadorian education by placing its processes to the politics and the sociology, promoting an alternative education that values the otherness of the other in all his/her dignity; a

humanist and personalistic education that practices democratization and free access to education; an education that builds and does not destroy.

To value and apply the postulates stipulated in the Constitution of the Republic of Ecuador and in all the regulations established in the laws derived from: Organic Law of Higher Education, Intercultural Education Law and to realize all the postulates that promote the construction of an integral and holistic education.

To propose guidelines for an integral education in Ecuador according to the established by UNESCO that propitiates the knowledge to know, to be, the know-how, the knowledge to coexist and the knowledge to undertake as main referents that will give place to the development of competencies, potentials, skills in the learning subject and in the subject that teaches as people who "are being".

Reference

Aguilar-Gordón, F. (2019). Fundamento, evolución, nodos críticos y desafíos de la educación ecuatoriana actual. Actualidades Investigativas en Educación, Vol. 1 (N.19). Costa Rica: Universidad de Costa Rica.

Aguilar-Gordón, F. (2017). El currículo basado en competencias profesionales integradas en la universidad ecuatoriana. REXE. Revista de estudios y experiencias en educación, 16(31), 129-154.

Arenas, F., & Fernández, J. (2015). Pensamiento filosófico contemporáneo. Valencia: Universidad de Valencia.

Bentham, J. (1839). Deontología o ciencia de la Moral (Tomo I). Valencia: Librería de Mallen y Sobrinos.

Burgos, J. M. (2012). Introducción al personalismo. Madrid: Palabra.

Castellano, H. G. (2007). El pensamiento crítico en la escuela. Buenos Aires: Prometeo Libros.

Coll, C. (1996). Constructivismo y educación escolar: Ni hablamos siempre de lo mismo ni lo hacemos siempre de la misma perspectiva epistemológica. Anuario de Psicología (69), 153-178.

Colom, A. (2002). La (de) construcción del conocimiento pedagógico. Barcelona: Paidós.

Constitución del Ecuador. (2008). Constitución de la República del Ecuador. Quito: Registro Oficial 449.

Dal Maschio, E. A. (2015). Platón: La verdad está en otra parte. Barcelona: Bonalletra Alcompas, S. L.

Delval, J. (1997). Hoy todos son Constructivistas. Barcelona: Cuadernos de Pedagogía.

Guilar, M. E. (marzo de 2009). La idea de Bruner: "de la revolución cognitiva" a la "revolución cultural". Educere, 13(44), 235-241.

Kant, I. (2000). Lógica. (Jäsche, Trad.) Madrid: Akal.

Marcel, G. (1957). Filosofía concreta. Revista de occidente.

Marcel, G. (1964). El misterio del ser. Buenos Aires: Sudamericana.

Marcel, G. (1987). Aproximaciones al misterio del ser. Barcelona: Encuentro.

Marías, J. (1980). Historia de la Filosofía. Madrid: Hunab Ku.

Ministerio de Educación. (2006). Plan Decenal de Educación. Quito: ME.

Ministerio de Educación. (2014). Educación Ecuador. Recuperado el 18 de 06 de 2016, de Ministerio de Educación del Ecuador: http://educacion.gob.ec/wp-content/uploads/downloads/2014/06/curriculo-educacion-inicial-lowres.pdf

Morin, E. (1999). Los siete saberes necesarios para la educación del futuro. París: Santillana.

Mounier, E. (1983). El Personalismo. Bogotá: Editorial Nueva América.
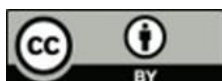
Mounier, E. (2007). El Compromiso de la Acción. Madrid: Fund. Emmanuel Mounier.

Pérez de Laborda, A. (2000). Sobre quién es el hombre: Una antropología filosófica. Madrid: Ediciones Encuentro, S. A.

Rousseau, J. J. (2008). El Emilio, sobre la educación. Pamplona: Eunsa.

Senplades. (2013). Plan Nacional del Buen Vivir 2013-2017. Quito: Senplades.

Senplades. (2017). Plan Nacional de Desarrollo 2017-2021. Quito: Senplades.

Urbayen, J. (1997). La concepción de Gabriel Marcel acerca de la dignidad personal. Salamanca: Universidad.

Vivas Herrera, J. (2013). Educación y conocimiento: El problema del conocer en la escuela. Sophia: Colección de filosofía de la educación, 231-250.

Zubiri, X. (1983). Inteligencia sentiente: Inteligencia y razón. Madrid: Taurus.

Authors

FLORALBA AGUILAR-GORDÓN obtained her PhD degree in Philosophy from Pontificia Universidad Católica del Ecuador, in 1996. She obtained her master's degree in Education of Higher Education by Universidad Tecnológica América, in 2008. She obtained her master's degree in Applied Technology in Education from University de Alicante, the Autonomous Universidad Autónoma in Barcelona and Universidad Carlos III in Madrid, in 2010. She has a master degree in distance education from Universidad Técnica Particular de Loja, in 2010. She has a Diploma in Analytical Knowledge from Universidad Internacional de la Rioja, Spain, in 2016. She obtained a degree as specialist in Curricular Planning and Organization of Distance Education Systems by Universidad Técnica Particular de Loja. She obtained a Diploma in Curriculum and Didactics from Universidad Tecnológica América. She obtained a Diploma in Educational Transformation from Universidad Multiversidad Edgar Morin of México in 2009. She obtained a Diploma in e-learning by el Instituto Tecnológico of Madrid, in 2016. She obtained a higher degree in educational research from Universidad Tecnológica América. She obtained her higher degree in fundamentals of distance education and research by the Universidad Técnica Particular de Loja. She obtained her higher degree in cooperative learning from the Catholic University of Brasilia, in 2002. She has an international tutor certification accredited by the Catholic University of Brasilia in 2004. She obtained a higher degree in technology, management and leadership from the Universidad Tecnológica América. She obtained a degree in philosophy from the Faculty of Human Sciences of Pontificia Universidad Católica del Ecuador, in 1991. She obtained a degree in social, political and economic sciences from the School of Law of Universidad Técnica Particular de Loja, in 2007. She was awarded the title of lawyer for the School of Law of Universidad Técnica Particular de Loja, in 2013.

She is currently a tenured professor at Universidad Politécnica Salesiana. She is editor-in -chief of the journal Sophia: Collection of Philosophy of the Education, edited by Universidad Politécnica Salesiana of Ecuador indexed in more than 60 indexes and databases internationally recognized. She is the coordinator of the research group in Philosophy of Education (GIFE). Member of the Scientific Board and international reviewer of important journals of Ecuador, Spain, Colombia, Uruguay, Chile, Mexico and Costa Rica.

JULIO ROSERO-GUILLÉN graduated in philosophy and pedagogy at Universidad Politécnica Salesiana of Ecuador. He has theology studies at Universidad de San Buenaventura, Bogotá, Colombia.

He is currently a religious man of the Congregation of the Schools of Charity Cavanis Fathers.
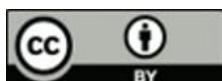
Percepciones sobre el concepto nación: diagnóstico a través del aporte literario de Juan León Mera y la propuesta del decoloniaje

Perceptions about the concept of the nation: diagnosis through the literary contribution of Juan León Mera and the decolonial proposal

Glenda Viñamagua-Quezada

Universidad UTE, Quito, Ecuador

glenda.vinamagua@ute.edu.ec

https://orcid.org/0000-0002-9514-1855

Resumen

De la labor literaria, así como del arte en general es relevante su postura crítica, que surge como una respuesta a los acontecimientos que se manifiestan a nivel social con el fin de cuestionar el sistema establecido y conseguir transformaciones. Esta labor se comprende como el compromiso que deberían asumir los intelectuales. En este caso se hará un acercamiento a la postura de Juan León Mera con respecto a la creación y comprensión del concepto de nación a través de la composición de la letra del Himno Nacional del Ecuador. Se expondrá desde el enfoque de teorías como el decoloniaje y el *corazonar,* una alternativa de espacios inclusivos, que se asumirán como un reto para la sociedad al ser abordados y difundidos desde la educación. El objetivo del presente artículo es reflexionar en la construcción de la idea de nación a partir de la exclusión del *otro* y en el decoloniaje como una forma de contrarrestar este pensamiento. Para ello se ha realizado una investigación bibliográfica documental desde una óptica hermenéutica. El aporte de esta investigación radica en enfocar a la teoría del decoloniaje como una alternativa para despertar la

conciencia crítica hacia la reivindicación en comunión con la alteridad a través del trabajo literario y educativo.

Palabras clave

Alteridad, coloniaje, decoloniaje, intelectuales, otredad, nación.

Abstract

From the literary as well as the art in general, its critical position is relevant, arising as a response to the events that manifest at the social level in order to question the established system and achieve transformations. This work is understood as the commitment that intellectuals should acquire throughout history. In this case, an approach will be made to the position of Juan León Mera regarding the creation and understanding of the concept of nation through the composition of the lyrics of the National Anthem of Ecuador. It will be exposed from the theory approach such as decolonialism and heart, an alternative of inclusive spaces, assumed as a challenge for society to be approached and disseminated from education. The objective of this article is to reflect on the idea of nation and its construction from the exclusion of the *other* due to the process of colonization as a way to counteract this thought; for this a documentary bibliographic research has been carried out from a hermeneutical perspective. The contribution of this research lies in focusing on decolonial theory as an alternative to awaken awareness towards the claim in communion with otherness through literary and educative work.

Keywords

Alterity, colonialism, decoloniality, intellectuals, nation, otherness.

1. Introduction

The concept of nation is in constant change, although its beginning obeys certain historical processes, it is also true that those who agree and accommodate their approach are the minority groups, giving way to the marginalization of the peripheries in the Nation project. Due to the rigidity that is intended to articulate this concept by linking it only with some elements that privilege the minorities in front of the other, Bhabha (2002), indicates "Fanon's critique of the fixed and stable forms of nationalist narrative make it imperative to question theories of horizontal and homogeneous empty time of Nation narrative" (p. 189)

Thus, the marginalized groups of the idea of nation should be subjected to a process of cultural annulment and indoctrination to be recognized as part of it, because this concept was structured from inclusion and exclusion to achieve a common identity. This approach differs with the differences that make up the human groups, so there are many criticisms about it. Therefore, Mellado (2008) says "a nation cannot be thought of in terms of closure, but should be regarded as a figure in constant evolution, as something that is being constructed continues" (p. 31).

The colonial gaze to build the concept of nation displaces otherness and validates the vision of power groups. In the Ecuadorian context, the literary work of Juan León Mera and his visionary position regarding the indigenous in the formation of the nation after the Spanish invasion process is valued. However, the religious and idiomatic conditions imposed on indigenous people to integrate them into the Ecuadorian nation should be mentioned.

These conditions show the dependence on the Spanish crown, which still remained in the nascent republic, a dependency that still remains nowadays. This attachment is still present with other types of colonizers and is known as the coloniality of the being, of knowing and of thinking.

It is necessary to clarify that the coloniality that prevailed in the idea of Ecuadorian nation was the concept of *race*; term that originated a stripped culture that became visible with the work of Mera, and despite the questions that could exist regarding its position on the indigenous culture, his contribution was vital and visionary for the recognition of diversity due to the context in which his work arose. As Quijano indicates (2000)

> The power structure was and still is organized on and around the colonial axis. The construction of the nation and above all of the nation-State have been conceptualized and worked against the majority of the population, in this case of the Indians, black people and mestizos. The coloniality of power still exerts its dominion in most of Latin America, against democracy, citizenship, the nation and the modern nation-State (p. 237).

It thus raises the decoloniality, theory originated in America, formerly known as Abya-Yala[1], like a place of coexistence from the integration of the cultural diversity, where the otherness opens way to a range of different possible forms of life in the idea of the nation. Within this scenario, the writer will assume the challenge of narrating a new history with the prominence of the peripheries, while the teacher cultivates the critical thought from the classrooms from insurgent thoughts like the heart, described by Guerrero (2010) as:

> Thinking about it is not simply a neologism, but it implies thinking of a way of breaking the fragmentation that made the coloniality of power, since reasoning has been the center of the Constitution of the human from the colonial rationality of the West; and from a semantic point of view the single word connotes the absence of the affective, the reason is the center, and affection does not appear even in the periphery (p. 40).

This thought is based on the Andean philosophy, where thinking prevails with the heart; this is the way how human beings are understood as an integral and balanced system that values the common well-being against the individual desire, in counterpart of the capitalist modernity that originated in America from the European colonialism, where reasoning prevails before the individual in front of the group.

With regard to the methodology, this article complies a documentary bibliographical investigation that uses the hermeneutic method to carry out a journey through the historical process that provoked the emergence of the Ecuadorian nation, the figure of the indigenous and the role of Juan León Mera in this context when writing the National Anthem of Ecuador. The proposal deals with decolonialism as a formula that denounces the persistent

---

[1] Abya Yala means Mature Land, Living Earth or Land in Bloom; it was the term used by the Kuna, native people who live in Colombia and Panama to designate the territory understood by the American Continent. According to the historical moment lived, they referred to this territory in a different way: Kualagum Yala, Tagargun Yala, Tinya Yala, and Abya Yala, the latter being the one that coincided with the arrival of the Spaniards (Carrera B. and Ruiz Z., 2016, p. 17)

colonialism "as a process of domination that has not yet concluded, but has been concealed by an intrinsic phenomenon to the same coloniality: modernity" (Guerrero, 2010, p. 25).

2. Main theoretical approaches for the inclusion to the concept of nation

Concretizing a meaning of nation is a complex task, even more when the reality of the Spanish colonies in America is observed, where the cultural exclusion keeps the other in the periphery and decreases him/her in dominant hegemony, configuring history and the present. Thus, thinking that nation and culture are inherent terms would exclude the integration of diversity into a single project. In such a way that in order to belong to a nation, the culture must be cancelled and assimilated by the power groups to feel inside and protected by it. In this regard, Gellner (2001) clarifies that "man wants to be politically united to those and only those who share the same culture" (p. 80). The purpose of this condition is to reaffirm the purist spaces that locate, categorize and discard in terms of getting societies to retain the historically established roles.

These concepts traditionally transmitted reveal the marginalization of minority groups and their consequent conditioning to annul their cultural identity, condition to be accepted as part of the nation. It is necessary to mention that these minorities are not included in fullness despite their subjugation, consequently, this condition becomes a tool of dominion. In this regard Romano (1994) mentions:

> A nation is a space delimited by natural frontiers, populated by men who speak the same language and who practice the same religion and are united among them by a "national spirit" that is not well identified {...} but the reality is different: in the natural frontiers, not being at all natural for all, people are willing to defend or conquer them. Minorities (ethnic, religious...) generally enjoy very few rights (p. 28).

The concept of a nation is due to a social creation that is useful for the perpetuation of both dominant and dependent states. This concept is disseminated through the use of education as mentioned by the Traverso (1998) "However, all the doctrinal baggage, with marked eurocentric bias has come through the texts of social sciences to all parts of the planet and has contributed to the universalization and reification of all this theorization" (p. 41). Thus, speaking of nation would only be to repeat imposed ideas that are thought and assimilated as their own according to a discourse that appeals to both intellect and emotion.

The idea of nation conforms to the interests of the oligarchy, defined by Romano as *owners* and minority groups, whose roles in the society are described as follows:

> In 1830, the state of Michoacán in order to define them (according to the norms of the census for the exercise of the right to vote) says: we call owners those who have real estate and those with profession, like the scribes, the military, lawyers, manufacturers, bankers, traders, change agents, artists and others with personal and indirect contributions, and whose interests are closely linked with the subsistence of the government (Romano, 1994, p. 32).

The absence of otherness is described as well as the ignorance of the other in a diverse society, as occurred in the so-called colonies in America for the construction of an integrative nation and whose biases still survive. It Is clear that the important decisions to
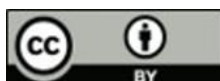
construct a social memory have historically ignored the voice of those who were victims of "a violent conquest, bloodthirsty, blind, which led to the destruction of other people possessing a culture and a civilization superior to those of the conquering group" (Romano, 1994, p. 35).

Although the non-acceptance of the external culture against the internal one has been exposed to this moment, it is also necessary to indicate the conflicts generated in the territory. Because of the assimilation of this concept, several interests mainly linked to the supremacy and dominion did not give way to the visibility of diverse cultures in the construction of nation and were intended to annul them.

> The problem is not simply the "sameness" of the nation as opposed to other nations' otherness. We are confronted with the divided nation within itself, alienated from its eternal self-generation, becoming a significant space to be made up of, which is internally marked by the speeches of minorities and the heterogeneous histories of rival people, antagonistic authorities and tense locations of cultural difference (Bhabha, 2002, p. 185).

Thus, intellectuals linked to the artistic field with the diffusion of their thought through their work, make visible these hidden realities to include them in the concept of nation, which emerged after the displacement of the colonies. One of these intellectuals was Juan León Mera, who emphasizes the presence of indigenous culture and its importance in the Ecuadorian nation project.

3. Conception of the romantic and foundational in a historical and geographical context

The story is created under the vision of those who have the voice to speak about it, and the present is also being constructed under the same voice. It is necessary to indicate that there is machinery that moves behind the intellectuals, either by their ideology or by their accommodation, and thus creates key moments marked as historical.

The episode that was the framework for the beginning of the idea of nation is referred to the French Revolution and the emergence of the modern age with its nationalist heritage, both spaces nuanced by conflicts and revolution. This revolution commits to the church which until then was a single pillar, to the policy which marks another vision from the French Revolution, to the field of art which leaves aside the neoclassical paradigm of rigidity.

In this context the Romantic Movement arises, marking a rupture with the neoclassical, speaking purely of German or English romanticism. In America, this movement is more related to the founding literature, time that corresponds to the thought of Juan León Mera.

3.1 Inclusion of indigenous culture in the idea of the Ecuadorian nation

The idea of nation emerged as a modern concept to support states after key facts within universal history. In this context, the intellectuals of the XIX century pledged to contribute to the construction of the nation, specially the intellectuals of America, who were also influenced by the emancipation processes of the Spanish crown. Thus, the need this continent had to reformulate a concept of nation from the viewpoint of fusion and the indigenous reality to grant legitimacy from the letters.

A concept of nation urged on this continent that would include the mixing and the indigenous reality and legitimized from the letters. In the newly constituted Ecuador, many intellectuals contributed to shaping this nation in the framework of American Romanticism; however, one of the most significant contributions was made by Juan León Mera, not only for having written the National Anthem, which is certainly his main contribution for the nation, but for the entire intellectual trajectory that led him conclude with this work.

Among his contributions are the translation of the Kichwa into Spanish of lyrical compositions, among which is the poem Atahualpa Huañui whose authorship is granted to a chieftain of Alangasí. In the translation of this piece, Mera shows its commitment to the indigenous cause in the idea of the nation. The following table transcribes selected verses from the poem in its original version, as well as the translation of Juan León Mera and the remarks made by Rodríguez Castelo about the scope of the translation.

Atahualpa Huañui Kichwa	Atahualpa Huañui Translation of Juan León Mera	Note about the translation
8. Puyu puyulla 9. uiracuchami, 10 curita nishpa 11 Jundarircami. 12 Inca yayata 13 Japicuchishpa, 14 Siripayashpa 15 Huañuchircami.	como niebla espesa vinieron los blancos y de oro sedientos llenáronse aquí. al padre inca luego duros apresaron, tendiéronle en tierra, le hicieron morir.	With regard to the translation of this lyrical work, Rodríguez Castelo (s.f.) performs a comparison analysis of the metric and intensity observed in the poem, both in its original language and in the translation and concludes: "Mera has collected repeated and insistent patter, but no the essence of the original Quichua" (p. 29). This observation of Rodríguez Castelo manifests the limits implied by a translation exercise.
29 Mana llaquisha 30 Ñuca llactapi 31 Shucta ricushpa. 32 Turi cunalla 33 Tandanacuchun, 34 Yahuar pampani 35 Huacanacushum. 36 Inca yayalla, 37 Yanac pachapi 38 Ñuca llaquilla 39 Ricungui yari. 40 Caita yuyashpa 41 Mana huañuni, 42 Shungu llugshishpa 43 Causaricuni.	¡como no abrumado he de estar de pena, viendo que mi patria de extraños es ya! juntémonos todos, hermanos, y vamos la tierra sangrienta de llanto a regar. desde el alto cielo, ¡oh inca, padre amado! nuestra amarga pena dígnate mirar. viendo tantos males, ¿no me he de morir corazón no tengo, ¿y aún puedo vivir?	

Table 1. Elegy verses of Atahualpa Huañui in Kichwa with the translation of Juan León Mera (Rodríguez Castelo, s.f., pp. 25-26).

The verses mentioned in the table do not respond to the entire poem and have been numbered according to their original order. The criterion of selection of these verses is due to the finding of terms that denounce the ravages that provoked the Spanish invasion, its
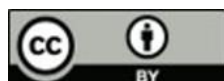
consequent colonialism and the feeling of the indigenous. It emphasizes the translation work of Mera by becoming diffuser of the indigenous thought through the Spanish language.

Another key contribtion that Mera took into consideration in the nation-building project was Christianity as the condition without discussion to be considered Ecuadorian. Although Mera valued the indigenous culture, its conservative tendency did not allow it to accept a religion different from the Catholic, so his work could not be considered a total vindication of the indigenous culture, however its vision in that historical context is remarkable.

The contribution of Juan León Mera as a founding poet is very significant from the intellectual field, because it influenced his vision of the world to transmit a concept of nation. This idea that germinated included concepts such as multiculturalism, albeit in a limited way by the conditions to which the natives were subjected to be recognized as part of the Ecuadorian nation.

3.2   Inclusion motivated by religion

The founding of the American nation is known as a counterpart of the European not as an independent nation. Therefore, it was necessary to follow other ways of achieving this objective, such as the need to include indigenous cultures (which were then recognized as a single one), but this inclusion was not free. Juan León Mera considered that indigenous people should be included in the new concept of nation, but to do so they had to Christianize and speak Spanish, without leaving aside their customs, languages and traditions, which were allowed to continue practicing but only in their spaces. These conditions should be fulfilled to be recognized as part of the nation.

This point of view of Mera shows the liberal characteristic that characterized him, before appending to the thought of the president García Moreno mentioned by Pedro Moncayo as "traitor of the country and to the republics of Pacific, monster from which has nothing to say as legislator and man of State" (Buriano, 2009, p. 201). With respect to García Moreno, Mera states:

> Frankly, I am by nature an enemy of the scaffold, and I do not even want you, but I like that you are the one governing, even if you know how to shoot, because there are things that are worth more than the life of a revolutionary, which are religion, morality, peace and other common interests in a nation (Vallejo, 2002, p. 210)

Mera's political inclination and his intention to claim the indigenous in the nation project could be understood as a conditional pluralism that showed its conservative spirit and also confirms the elements that make up the Ecuadorian romanticism, such as political, religious and social issues or problems.

Religion was so relevant to Mera and to those who thought of the nation in the XIX century, to the point that some intellectuals indicate that Ecuador was formed in the church; this affirmation is confirmed when Mera (S. f) mentions "The political history of nations always (has been) attached with religious history" (p. 180).

It is observed in Mera an intention to vindicate the Christianity presented during the process of Spanish invasion. Mera conceives it as a space that can be shared by white, mestizo and indigenous; therefore, the Catholic faith should be one of the requirements to form nation and be citizens, according to Mera's worldview.

3.3   The linguistic and aesthetics considered as pillars of the nation

The intellectuals of the XIX century, including Mera, have a founding horizon to more of the aesthetic project, which is observable in the case of Mera when creating the letter of the National Hymn of Ecuador. Likewise, it can be affirmed that all his work is oriented towards the visualization of the components of the new Ecuadorian nation considering the kichwa[2] tradition in its aesthetic contribution in the literature as in its linguistic structure. In this regard, Harrison (1996) mentions "Although Mera never proposed the adoption of kichwa as a national language, it is observed through his essays that his ideas were based on the principle that language was an external force influencing thought" (p. 85).

One of Mera´s proposals was the incorporation of kichwa words to the lexicon, to enhance Spanish as the official language of the nation; an initiative that is reinforced when he is named member of the Royal Academy of the Spanish language in 1872 (Harrison, 1996, p. 88). However, it is also necessary to remember the indoctrinating weight that the domain of this language had "Mera thought that the aboriginal language was useful only for the groups with a special interest like the clerics and the philologists" (Harrison, 1996, p. 119).

The valuation of the Kichwa for Mera obeyed to the fact of integrating the natives to the project of the nation. The translation of Atahualpa Huañui reinforced the idea of "turning Atahualpa into a founding icon of the Ecuadorian nationality and in a sense, displacing the mythical history of the Kingdom of Quito" (Prieto, 2010, p. 304), although Mera idea referred to the recognition of indigenous influence in the mestizo project of the nation and not to overcome the representativeness of Atahualpa to the Kingdom of Quito.

4.   The National Anthem as a symbol of the constitution of the nation

Mera sets the foundations of the nation structure from the literature with its critical studies and compilations of the creations that were given until then. In his literary work, the moralizing and didactic theme was very important in the thinking process of the nation, and the most significant of them was the National Anthem of Ecuador.

It should be mentioned that Ecuador had an anthem of its own 30 years after its formation by the initiative of Juan León Mera. This intellectual from Ambato was born 10 years after the battle of Pichincha, and in 1865 he writes the National Anthem. Four years later Juan José Allende gives music to the hymn, and in 1870 Antonio Neumane wrote the definitive music (Miño, 1996, pp.156-157).

All the work and trajectory of Mera was synthesized in the creation of the National Anthem in 1865, a subject that provoked many questions due to its position with respect to Spain and the colonialism process in the nascent Ecuador. However, this controversy did not make it possible for the lyrics of the hymn to be changed, although its music suffered changes, since the first stanza was replaced by the second.

---

[2] Kichwa is one of the 14 ancestral languages of Ecuador, this form of writing is typical of the communities, while the Spanish version is Quichua, so it will be read Quichua when it comes to quotes to preserve the writing of the original text, and kichwa in the rest of the article.

This conflict remained until 1922, Pablo Arturo Suárez, doctor from Ambato, tries to end this fight, which still showed at that time a service towards Spain, Suárez says "The national anthem that we have translates the feelings of our ancestors and I think we should respect it" (Miño, 1996, p. 157).

However, the desire for the change continued and in 1923 the Congress chaired by Carlos Alberto Arroyo del Rio delegated in the Academy of the language the change of the letter. The Academy brought together three people in charge of this task: Juan León Mera Iturralde, son of Juan León Mera; Manuel María Pólit, Archbishop of Quito, Clemente Ponce, Minister of Foreign Affairs. In this way, the academy, the church and politics from their power had to decide how to resolve this conflict (Miño, 1996, p. 158).

The measures they took were to replace, not eliminate, the second stanza for the first, in this way, Spain would not feel hurt by the Ecuadorian patriotic chant.

I

Your children of <u>the yoke</u> were outraged,
For they were imposed by the audacious <u>Iberians</u>,
By the unjust and horrendous disgrace,
Fatally weighing upon you.
From the skies a holy voice cried out,
that noble voice of an unbreakable pledge,
to defeat that <u>monster of blood</u>,
that <u>this yoke</u> of yours would disappear.

II

The first sons of the soil, noble
Which the proud; the <u>Pichincha</u> adorns,
They declared you as their sovereign lady forever
And <u>shed their blood</u> for you.
God observed and accepted the holocaust,
And that blood was the prolific seed
Of other heroes whom the world in astonishment
Saw rise up around you by the thousands.
Rise up by the thousands, Rise up by the thousands.

In addition to this exchange of verses, they replaced certain words that denounced the invasion of the Spanish crown. This change is proposed as an attempt to soften the exposed language, but this mutilation showed a tool that far from achieving this purpose more evidenced the transgressive spirit of the Hymn.

According to (Miño, 1996, p. 158), the verses that were attempted to change were the following:

Third verse
Original lyric: ""and to the shattered lion could be heard/of helplessness and roaring vexation"
Chance proposal: "Haughty roaring away"

Fourth verse
Original lyric: "The Spanish ferocity finally gave way"
Chance proposal: " Finally gave up its untamed bravery"

In 1948, after an investigation carried out by Father Aurelio Espinoza Pólit, in the government of Carlos Julio Arosemena Tola, the Hymn was formalized, and on November 23 it was declared as intangible (Miño, 1995, págs. 156-162). In 1965, it was established as day of the National Anthem on November 26.

While Mera's speech appealed to the reconciliation of those who were part of the nation, he was recognized as Spanish in American lands, but he also claimed to recognize America as his beloved mother (Miño, 1995, pág. 156). Thus, both geographical, historical and social spaces have a place in their epic chant, however, in his work it is also clear that he would rather sacrifice components of indigenous culture like religion or the detriment of the Kichwa language in search of reinforcing the idea of the nation.

5.   Contribution of the education in the decolonial process

The coloniality of seeing, of knowledge and of thinking remains in a special way to the societies that come from a historical process of European colonialism; there is no doubt that these invasions marked the ways of being of the inhabitants of America, formerly known as Abya Yala, demonstrated in everyday attitudes like the ways of dressing, speaking, thinking and writing. The different forms of coloniality allow hegemonic power to manifest and survive in the marginalized groups through their life choices. Valdez *et al.* (2019), explain it as:

> Colonization brought with it a series of negative variables for the coexistence in what is now known as Latin America, philosophical, political and territorial implications that for more than 500 years remain in the minds of the Latin inhabitants, as Fallilone analyses (2017): it cannot be forgotten "the stage of oppression and exploitation lived during the colonization and usurpation of our soil through the Europeans" (p. 238).

Although the implications of the Spanish invasion are highlighted, it should be pointed out that one of the greatest concerns of this violent episode of history is the attack on culture, a fact that does not constitute any questioning, since there is a veil that clouds these new forms of colony "coloniality of power, which originates with the invention of America and establishes a new pattern of global power in the expansion process of the capitalist world system" (Guerrero, 2010, p. 24), then, the only thing that is clear to the new colonies is to assimilate that the ruling by the dominant minorities is valid and surely is what must be done to achieve welfare depending on the new orders imposed.

This way of building and understanding the world-system entrenches the idea of social stratification that legitimizes social roles through the school system, as Molina (2016) mentions, "The school contributes to reproducing the distribution of cultural capital, and it collaborates with the structure reproduction of the social space" (p. 947). In such a way that social roles would be conditioned by the place of origin, culture, purchasing power and race. This conditioning leaves in evidence the coloniality of the still latent power, in this respect Quijano (2000) assures "In other terms, race and racial identity were established as instruments of basic social classification of the population" (p. 202) and they perpetuate through educational systems.

These forms of coloniality come from Western hegemony that includes Europe in the first term and has expanded to the United States. In this regard, Molina (2016) says:

> However, inside Latin American schools and also in historical terms, the culture considered legitimate has always been that of the best positioned classes in the local social space, constituted by the descendants of the white European conquers. The "Universal History" taught is the story that Europe has (and then the United States, during the XX century) as a center (p. 954).

This consolidates the coloniality of being, seeing and thinking that survives under the framework that weave the recent colonizers where cultures are nullified to achieve homogenization. In this regard, Bhabha (2002) states "we must always keep open an additional space for the articulation of cultural knowledge that is adjacent and attached but not necessarily cumulative, theological or dialectical" (p. 200).

The nation is set up from diversity and the cultural articulation, where dialogue with otherness is relevant to living in harmony, being one of the main legacies of the indigenous culture. To counteract homogenization, the role of committed intellectuals, i.e., writers and teachers, is nuclear because they are the creators and diffusers of thought through written language. It should be pointed out that decolonial theories should constitute an axis within the critical thought in Latin America.

One of the key elements in the origin of the nation is the creation of its symbols, in which s sought the identification and union of the society. In this way, it is visionary the work of Juan León Mera in the creation of the National Anthem of Ecuador, where the invasion, the colony and the liberation are stated, as well as the indigenous legacy and the Spanish footprint in the conception of the idea of the Ecuadorian nation. This hymn caused controversy, especially with the verses of the first stanza both in the XIX century and in more recent times. In this regard, Ayala Mora (2007) narrates that:

> An academic or political act started with the National Anthem chanted by the attendees... After the chorus, when the world began to sing "The first sons of the soil,...", a hoarse and energetic voice sang with the same music "Your children of the yoke were outraged," Many thought it was a clueless, but those who knew him knew that Reinaldo Miño was there, always with the idea to maintain that the song fatherland should not be mutilated; that the first stanza should have remained" (p. 97).

The reaction of Reinaldo Miño as an intellectual is consistent with the decolonial position, which denounces power mechanisms imposed by the west, where the human being is fractionated to submit him from the concept of race. Guerrero (2010) argues

> An act of decolonization, would it not be to begin to conquer1 the Western epistemologies that are still present in our academic and intellectual practices? (Guerrero 2010, p. 41).

Then the work of the intellectuals is to be placed in the margins of the society to contravene the standards of the modernity that nowadays constitute the new colony. Hence, the importance of decolonialism as a practice of good living that emerges as a philosophy of minorities to apply ancestral knowledge in everyday forms of life. Making public this way of life through arts and education is a challenge that is still under construction to rethink the human being from the integral aspect.

6. Conclusion

The nation is a voluble concept that has reached exclusionary repercussions, because it encompasses cultural elements that overlap others. This detriment generally reaches the majority that have been subjected to what imposes hegemonic power in search of achieving homogeneity in modern societies.

Nations seek symbols that identify them and that are accepted by those who make them, if the National Anthem of Ecuador is a birth certificate from the intellectuality to the Ecuadorian nation, it is questionable the change of the lyric in favor of Spain, how could it be a nation if there were still bonds of dependence towards the Spanish crown, towards the head of the lion, which Sucre stepped into a statue created in his honor?

In this unfinished and artificial creation called nation, the conflicts that arose due to the lyric of the National Anthem of Ecuador showed that the recent Ecuadorian nation could not be detached from its inventor. From there originates the colonized thought that still survives, perhaps no longer towards the European invaders but towards new organisms and other nations with which other types of dependencies have been generated.

The colonial matrix is still maintained and perpetuated through education, which reveals the coloniality of seeing, knowing and thinking. The work of the writers is to turn the gaze towards decolonial thinking in order to understand it within the current context and to put it into practice in search of the liberation of colonial bonds that are still held in the Ecuadorian society.

---

[1] This term employed by Guerrero (2010) indicates "that the heart does not exclude, does not make the reason invisible, but instead, the heart nourishes it of affection, so that decolonize the perverse, conquering and colonial character that historically has had" (p. 41)

References

Ayala, Mora. (2007). *Reinaldo Miño, el legado de un luchador (1924-2006)*. En Procesos Revista Ecuatoriana de Historia. No. 26 Quito: Universidad Andina Simón Bolívar.

Bhabha, Homi. (2002). *El lugar de la cultura*. Buenos Aires: Editorial Manantial.

Buriano, Ana. (2009). *La construcción historiográfica de la nación ecuatoriana en los textos tempranos en la nación y su historia. América Latina Siglo XIX*. Diego Palacios (coord.). México: El colegio de México, pp.167-225.

Carrera, Beatriz, Ruiz Zara. (2016). Abya Yala Wawgeykuna. Artes, saberes y vivencias de indígenas americanos. Obtenido de https://www.upo.es/investiga/enredars/wp-content/uploads/2017/03/Pr%C3%B3logo.pdf

Gellner, Ernest. (2001). *Naciones y nacionalismo*. Madrid: Alianza Editorial, pp. 77-88.

Guerrero, Patricio. (2010). *Corazonar. Una antropología comprometida con la vida. Miradas otras desde Abya Yala para la decolonización del poder, del saber y del ser*. Quito: Ediciones Abya Yala.

Harrison, Regina. (1996). *Entre el tronar épico y el canto elegiaco, simbología indígena en la poesía ecuatoriana de los siglos XIX-XX*. Quito: Ediciones Abya Yala.

Mellado, Luciana. (2008). *Aproximaciones a una idea de nación: convergencias y ambivalencias de una comunidad imaginada*. Obtenido de https://scielo.conicyt.cl/scielo.php?script=sci_abstract&pid=S0718-22012008000100003&lng=es&nrm=iso

Mera, Juan León. (S. F). *Ojeada –histórico Crítica sobre la poesía ecuatoriana.* Quito: Publicaciones Ariel

Miño, Reinaldo. (1996). *En torno al Himno Nacional. En Juan León Mera. Una visión actual.* Julio Pazos Barrera (comp). Quito: Corporación Editora Nacional.

Molina, Mercedes. (2016). La sociología del sistema de enseñanza de Bourdieu: Reflexiones desde América Latina. Obtenido de http://www.scielo.br/pdf/cp/v46n162/1980-5314-cp-46-162-00942.pdf

Prieto, Mercedes. (2010). *Los indios y la nación: historias y memorias en disputa en Celebraciones centenarisa y negociaciones por la nación ecuatoriana*, pp. 265-316

Quijano, Aníbal. (2000). *Colonialidad del poder, eurocentrismo y América Latina*. Obtenido de http://www.decolonialtranslation.com/espanol/quijano-colonialidad-del-poder.pdf

Rodríguez, Castelo, Hernán. (S. F.). Literatura Ecuatoriana. Quito: Publicaciones Ariel

Romano, Ruggiero. (1994) *Algunas consideraciones alrededor de Nación, Estado (y Libertad) en Europa y América Centro-Meridional en Cultura e identidad nacional*. Roberto Blancarte (comp.). México: Fondo de Cultura Económica, pp. 21-43.

Traverso, Martha. (1998). *La identidad nacional en Ecuador. Un acercamiento psicosocial a la construcción nacional*. Quito: Ediciones Abya Yala.
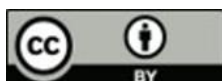
Valdez, Orlando, Romero, Luis & Gómez, Ángel. (2019). *Matrices decolonizadoras en la comunicación para entablar un diálogo con Occidente*. Sophia, colección de Filosofía de la Educación, 26(1), pp. 281-305.

Vallejo, Raúl. (2002). *Juan León Mera*. en Historia de las literaturas del Ecuador Volumen 3. Diego Araujo Sánchez (coord.). Quito: Corporación Editora Nacional, pp. 208-254.
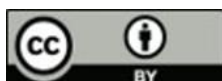
Author

GLENDA VIÑAMAGUA-QUEZADA has a degree in Education Sciences, a Specialization in Letters and Spanish by Pontificia Universidad Católica del Ecuador, she holds a master in Art Studies from Universidad Central del Ecuador. She has a master in Ecuadorian and Latin American Literature at Pontificia Universidad Católica del Ecuador.

She was a professor at Universidad de las Fuerzas Armadas ESPE, at Escuela Politécnica Nacional and at Universidad UTE. She wrote for the Journal Anaconda Arte y Culture, for the Journal Artes de Diario La Hora. She was a proofreader in the Journal Diplomacia del Ministerio de Relaciones Exteriores y en Diario La Hora. She participated as a jury of the Category Literature in the "National System of competitive Funds for the Arts and Editorial Fund" organized by the Ministry of Culture.
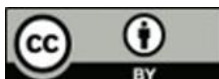
Análisis de la accesibilidad de los portales web de las instituciones educativas de la ciudad de Cuenca – Ecuador

Accessibility analysis of the web portals of the educational institutions in Cuenca, Ecuador

Milton Campoverde-Molina

Universidad Católica de Cuenca, Cuenca, Ecuador

mcampoverde@ucacue.edu.ec

https://orcid.org/0000-0001-5647-5150

Llorenç Valverde

Universitat de les Illes Balears, Mallorca, Spain

lvalverde@uib.cat

https://orcid.org/0000-0002-9163-568X

Resumen

Este artículo presenta un análisis de accesibilidad de los portales web de las instituciones educativas en la ciudad de Cuenca, Ecuador. El propósito de la investigación es evaluar la accesibilidad de los portales web con las Pautas de Accesibilidad para el Contenido Web (WCAG) 2.0 con un nivel de conformidad A y analizar su cumplimiento normativo. A partir de una revisión de diferentes fuentes bibliográficas se indagaron experiencias y resultados de investigaciones de accesibilidad web. Luego se presentan los resultados obtenidos de accesibilidad de 191 páginas web analizadas utilizando las herramientas en línea Examinator, TAW, Markup Validation Service y CSS Validation Service. Entre los resultados, se percibe que es necesario corregir errores en todos los portales web analizados de las instituciones educativas de la ciudad de Cuenca. Para establecer el nivel de cumplimiento se verifican los iconos que certifican la accesibilidad de los sitios por el World Wide Web Consortium (W3C) en HTML, CSS y sus niveles de conformidad A, AA y AAA. Con los datos
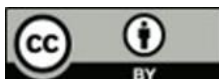
obtenidos de la evaluación de las herramientas automáticas corroboramos el nivel de cumplimiento de los criterios de éxito de la WCAG 2.0 con un nivel de conformidad A. Se concluye que se requiere corregir errores en todos los portales web de las instituciones educativas de la ciudad de Cuenca analizadas. Por el promedio de errores encontrados, es más factible que las instituciones educativas rediseñen sus portales web, a fin de cumplir con las WCAG 2.0. También pueden mejorar el cumplimiento de las WCAG 2.0, con un arduo trabajo de revisión y corrección del código fuente de sus portales web.

Palabras clave
Accesibilidad web, discapacidades, educación, inclusión educativa, WCAG 2.0.

Abstract
This article shows the accessibility analysis of the websites of the educative institutions of Cuenca - Ecuador. The purpose of the research is to evaluate the accessibility of the websites with the Web Content Accessibility Guidelines (WCAG) 2.0 with a level of compliance A and analyze their regulatory compliance. Experiences and results of web accessibility research were investigated from a review of different bibliographic sources. The results obtained from the accessibility of 191 Web pages analyzed using the online tools Examiner, TAW, Markup Validation Service and CSS Validation Service are presented. Among the results, it is observed that it is necessary to correct errors in all the analyzed Web portals of the educational institutions of Cuenca. In order to establish the compliance level, the icons certifying the accessibility of the sites by the World Wide Web Consortium (W3C) in HTML, CSS and their conformity levels A, AA and AAA are verified. With the data obtained from the evaluation of the automatic tools, it is corroborated the compliance level of the success criteria of the WCAG 2.0 with a conformity level A. It is concluded that it is necessary to correct errors in all the web portals analyzed of the educational institutions of Cuenca. For the average number of errors found, it is more feasible for educational institutions to redesign their web portals in order to comply with the WCAG 2.0. They can also improve the fulfillment of the WCAG 2.0, with a hard work of revising and correcting the source code of their web portals.

Keywords
Web Accessibility, disabilities, education, educational inclusion, WCAG 2.0.

1. Introduction
Web accessibility means that people with some kind of disability can use the Web in the same conditions as the rest of the people. Speaking of web accessibility is referring to a design that allows people with disabilities to perceive, understand and interact with the webpage. Web accessibility also benefits other people, including older people who have been depleted of their skills as a result of time. The Web is a very important resource for different aspects of life: education, employment, government, commerce, health, entertainment and many others. It is very important that the Web is accessible in order to provide equitable access and equal opportunities for people with disabilities. An accessible Web page can help people with disabilities to participate more actively in the society (World Wide Web Consortium, 2015).

ISO/IEC 40500:2012 (International Organization for Standardization, 2012) Web content accessibility guidelines (WCAG) 2.0] covers a wide range of recommendations to make Web
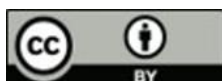
content more accessible. Following these guidelines will make content accessible to a wider range of people with disabilities, including blindness and poor vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movements, speech disabilities, photographic sensitivity and the combinations of these. Following these guidelines will also make Web content more usable for users in general. Non-compliant websites, Web technologies, or Web tools can create barriers that exclude people from using the Web.

Ecuador, like other countries (Instituto Ecuatoriano de Normalización, 2014), uses ISO/IEC 40500:2012 standard. In order to follow the obligatory compliance in Ecuador with the norm NTE INEN-ISO/IEC 40500 (Instituto Ecuatoriano de Normalización, 2014) the Ecuadorian technical regulations RTE INEN 288 "Accessibility for Web content" (Instituto Ecuatoriano de Normalización, 2016) entered into force on 8 August 2016 ((Instituto Ecuatoriano de Normalización, 2016). This regulation applies to the contents published in public and private sector websites that provide public services. In its first transitory, it establishes that until August 8, 2018, all Ecuadorian websites that provide a public service must be accessible WCAG 2.0 level A. As the WCAG 2.0, there are three conformity levels and 61 success criteria that web pages must comply with (25 success criteria), AA (13 success criteria) and AAA (23 success criteria). According to the deadline established in the first transitory, the Ecuadorian websites must have complied with the Accessibility Standard WCAG 2.0 level A. To achieve a conformity level (minimum), web pages must have fulfilled the 25 success criteria of the WCAG 2.0. The public and private institutions of the Republic of Ecuador along with Web developers must welcome and implement the regulations to allow universal access to the Web. In Addition, so far no regulations have been updated in Ecuador, but it may do so in the future with the WCAG 2.1 (World Wide Web Consortium, 2018).

Education is in an evolutionary process that adapts to laws, regulations and new demands in teaching-learning. A key aspect is to achieve the inclusion and participation of all people in the educative sector, as required by article 24 Education of the Convention on the rights of people with disabilities (United Nations). For this, educational websites must also comply with the provisions of the Ecuadorian technical regulations RTE INEN 288. Website administrators must apply the current accessibility regulations so that anyone can use their web portals.

According to statistics published by the National Council for Equality of Disabilities (CONADIS) with information from the Ministry of Public Health of people registered with disabilities in Ecuador from February 2016 to February 2019 (Consejo Nacional para la Igualdad de Discapacidades, 2019) has had an increase of 11.01% in Ecuador, meanwhile from October 2016 to February 2019 in the province of Azuay (Consejo Nacional para la Igualdad de Discapacidades, 2019), the increase was 4.70% and, particularly in Cuenca, the increase corresponds to 5.69% (Consejo Nacional para la Igualdad de Discapacidades, 2019). On the other hand, 1% of the people with disabilities in Azuay are included in the permanent popular education, 55% in regular education and 44% in special education (Consejo Nacional para la Igualdad de Discapacidades, 2015).

The purpose of this research is to evaluate the accessibility of the websites of the educative institutions of Cuenca-Ecuador with the WCAG 2.0 and a conformity level to analyze its normative compliance. To this end, answers of the following questions are sought:

- Which websites of Cuenca's educative institutions comply with the WCAG 2.0 and conformity level A.

- What is the average of errors in the Websites of the educative institutions of Cuenca?

Additionally, to verify whether the entry into force of the Ecuadorian technical regulations and the fulfillment of the deadline of the first transitory have contributed to improve the accessibility of the educational websites.

Regarding the structure and content of the article, section 2 presents the concepts related to the research. In section 3 is presented the review of different bibliographic sources of experiences and results of web accessibility research. Section 4 details the methodology used to develop this research. In section 5 is observed the accessibility results of the web portals of Cuenca's educational institutions and their normative compliance are shown. In Section 6, the conclusions are established according to the results obtained.

2. Related concepts

2.1 Web Content Accessibility Guidelines (WCAG) 2.0

The WCAG 2.0 (World Wide Web Consortium, 2008) covers a wide range of recommendations for creating more accessible website. It consists of 4 principles, 12 guidelines and 61 compliance criteria (success), plus an unspecified number of techniques and counseling techniques (Luján-Mora, 2018b):

1. Principle 1: Perceptible: User information and interface components should be displayed to users in ways they can understand.

- **Guideline 1.1: Alternative text:** it provides alternative text for non-textual content, so it can be transformed into other formats that people need, such as large characters, Braille language, oral language, symbols, or simpler language.
- **Guideline 1.2: Time-dependent multimedia content:** it provides synchronized alternatives for time-dependent synchronized multimedia content.
- **Guideline 1.3: Adaptable:** it creates content that can be presented in different ways without losing information or structure.
- **Guideline 1.4: Distinguishable:** it makes it easier for users to view and listen the content including the distinction between the most and least important.

2. Principle 2: Operable: User interface components and navigation must be manageable.

- **Guideline 2.1: Accessible Keyboard:** to be able to control all functions from the keyboard.
- **Guideline 2.2 Time:** it provides enough time for users to read and use content.
- **Guideline 2.3: Epileptic Seizures:** do not design content that may cause epileptic seizures.
- **Guideline 2.4: Navigation:** it provides ways to help users navigate, search for content, and determine where they are.

3. Principle 3: Understandable: Information and user operations should be understandable.

- **Guideline 3.1 Readable:** it makes readable and comprehensible the text content.

- **Guideline 3.2 Predictable:** it makes the appearance and how to use the foreseeable websites.
- **Guideline 3.3 Support for data entry:** it helps users avoid and correct errors.

4. Principle 4: Robustness: Content must be sufficiently robust so that it can be well interpreted by a wide variety of user agents, including assistive technologies.

- **Compatible Guideline 4.1:** it maximizes compatibility with current and future user agents, including support technologies.

2.2   Conformity levels

There are three conformity levels (World Wide Web Consortium, 2008):

- **Level A:** For the compliance with level A (the minimum conformity level), the website meets all the success criteria of level A, or a compliant alternative version is provided.
- **AA Level:** For the compliance with the AA level, the website satisfies all the success criteria of level A and AA level or an alternative version is provided that meets the AA level.
- **AAA Level:** For the compliance with the AAA level, the website satisfies all success criteria of level A, level AA and level AAA, or it provides an alternative version that meets the AAA level.

When a page complies with the Guidelines WCAG 2.0 it can include on it a statement that indicates the users that it complies with the W3C. The conformity level achieved is represented by a logo as shown in Table 1.

Conformity level A	Conformity level AA	Conformity level AAA
W3C WAI-A WCAG 2.0	W3C WAI-AA WCAG 2.0	W3C WAI-AAA WCAG 2.0

Table 1. Logos that represent the accessibility levels achieved (Confederación de Empresarios de Andalucía, 2010a).

If Some of the above logos are used, it must be accompanied by the following information (Confederación de Empresarios de Andalucía, 2010a):

- Date on which the compliance was revised.
- Title, version and URI of the Guidelines WCAG 2.0.
- Compliance level reached (A, AA or AAA)
- Scope: accurate enumeration of pages that comply with WCAG Guidelines 2.0.
- List of the technologies on which the content depends.

In Figure 1, the criteria of success are presented with their conformity levels for each one of the principles of the WCAG 2.0.
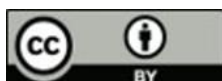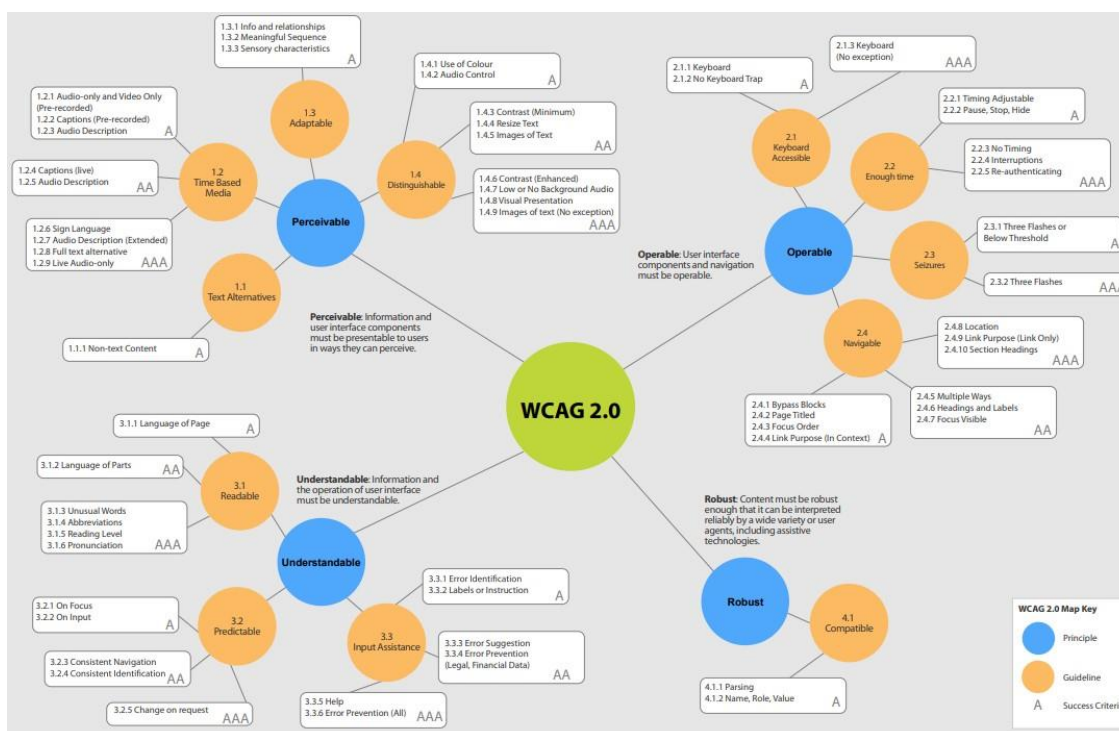
Figure 1. WCAG 2.0 Map (Stamford Interactive, 2012).

2.3 Regulations on web accessibility in Ecuador

On January 28, 2014, the Ecuadorian Institute of Standardization published in the Oficial Register No 171 the approval of the standard NTE INEN-ISO/IEC 40500 "Information Technology-accessibility Guidelines for W3C Web content (WCAG) 2.0 (ISO/IEC 40500:2012, IDT)" (Instituto Ecuatoriano de Normalización, 2014). On February 10, 2016, the Ecuadorian Standardization service published the Ecuadorian Technical Regulations RTE INEN 288 "Accessibility for the Web content" (Instituto Ecuatoriano de Normalización, 2016). This regulation entered into force on August 8, 2016 and establishes: i) it applies to the Web content published in public and private sector websites that provide public services, ii) the level of conformity AA, established in the standard NTE INEN-ISO/IEC 40500, III). Finally, two transitional provisions are included on the deadline to comply with the regulation and the standard:

i. It applies to Web content published on public and private sector websites that provide public services.
ii. The conformity level AA, established in the standard NTE INEN-ISO/IEC 40500, must be fully satisfied.
iii. Finally, two transitional provisions on the deadline for compliance with the regulation and the standard are included:

First transitory: The owners of the websites to which this technical regulation applies will have a period of 2 years to adapt the existing websites at the time of the entry into force of the regulation according to the conformity level of the current NTE INEN. On August 8, 2018, all Ecuadorian websites that provide a public service must be accessible WCAG 2.0 level A.
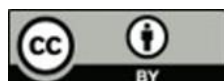
• **Second transitory:** The owners of the websites to which this technical regulation applies will have a period of 4 years to adapt their existing websites at the time of the regulation's compliance with the AA level of the current INEN standard. On August 8, 2020, all Ecuadorian websites that provide a public service must be accessible level AA WCAG 2.0.

In Addition, the Ecuadorian Technical Regulations RTE INEN 288 "Accessibility for the web content" issues sanctions regime: "The owner of the website that fails to comply with the provisions of this technical regulation will receive the penalties provided for the Law No. 2007-76 of the Ecuadorian Quality System, Organic Law of Communication and other laws in force".

2.4 Web Accessibility Assessment Tools

Web accessibility assessment tools are software programs or online services that determine whether web content complies with accessibility guidelines (World Wide Web Consortium, 2006). A tool of this type can never replace the review made by an expert in web accessibility, so these should be used as a first step, but not the only one (Luján-Mora, 2018a). Although they are very useful, it should be taken into account that they have certain limitations and are not able to identify all accessibility problems. They are not enough to ensure that a website is 100% accessible; therefore, the automatic review must be completed with another manual (Confederación de Empresarios de Andalucía, 2010).

2.4.1 Examinator

Examinator[1] is an online service to automatically evaluate the accessibility of a website, using as reference some techniques recommended by the WCAG 2.0. It awards a score between 1 and 10 as a quick indicator of page accessibility and provides a detailed report of the tests performed.

2.1.1 2.4.2 Web Accessibility Test (TAW)

TAW[2] is an online automatic tool for analyzing website accessibility. TAW's objective is to check the level of accessibility achieved in the design and development of websites in order to allow access to all people regardless their differentiating characteristics. It is intended for both inexperienced users who want to know the degree of accessibility of their website and for website managers, developers, website designers, etc.

2.4.3 Markup Validation Service

The Markup Validation service[3] is a free W3C service that helps verify the validity of Web documents written in HTML or XHTML markup languages. These languages are defined by technical specifications, which generally include a formal, machine-readable grammar (and vocabulary). Comparing a document with these restrictions is called validation, and this is done by the markup validator.

---

[1] Examinator: Web Accessibility Assessment. The information is obtained from http://examinator.ws/
[2] TAW: Web Accessibility Test. The information is obtained from https://www.tawdis.net/
[3] Markup Validation Service: W3C Markup Validator. The information is obtained from https://validator.w3.org/about.html/

2.4.4 CSS Validation Service

CSS Validation Service[4] of the W3C CSS Validation Service is a free software created by the W3C to help web designers and developers validate Cascading Style Sheets (CSS). What this tool does is to help people who write CSS to check, and correct, if necessary, their Cascading Style Sheets. Not only does it compare the stylesheets with the CSS specifications, but it also helps to find common errors, typographical errors, or incorrect CSS uses and some use risk.

3. Related work

In the year 2016, an investigation carried out the evaluation of 15 web portals, classified in 7 hospitals, 5 clinics and 3 medical centers using the online tool TAW. The results determine that the health institutions analyzed do not comply with the guidelines of the WCAG 2.0 with a conformity level A. Therefore, the authors conclude that the web portals are not accessible and their biggest problem is in the principle of robustness (Campoverde-Molina, Vizñay-Durán and Reyes-Espinosa, 2016).

A study presented in the year 2016 showed the preliminary results of an accessibility analysis of 31 web portals of educational institutions and schools in Cuenca, Ecuador. It was established in the results that the portals do not comply with the guidelines of the WCAG 2.0 with a conformity level A and its biggest problem is in the principle of robustness. In addition, the author concludes that 92% of the problems in web portals are warnings, 6% are errors and 2% are unverified points that require a complete manual analysis (Campoverde-Molina, 2016).

In the year 2016, an investigation carried out the accessibility evaluation of the websites in the top 20 universities with high academic prestige in the world classified by Webometrics. From the results, the authors conclude that many of the websites analyzed do not reach an acceptable compliance level. Universities with high academic prestige do not show a higher level of web accessibility. In evaluating the websites of the universities, the authors have identified that there are significant barriers for a big number of users (Acosta-Vargas, Luján-Mora and Salvador-Ullauri, 2016).

In the year 2016, an investigation conducted a study of 328 samples of family accommodation websites in Malaysia using the Automated Assessment Tool (Achecker) with the WCAG 2.0. The results show that there are 6 critical key accessibility errors:

- Non-textual content: img, alternative text (1.1.1).
- Information relations: input (1.3.1).
- Contrast: link, text color (1.4.3).
- Link purpose: anchor, text (2.4.4).
- Page language: HTML (3.1.1).
- Labels or instructions: Body, input (3.3.2).

---

[4] CSS Validation Service: About the CSS Validator. Information obtained from https://jigsaw.w3.org/css-validator/about.html
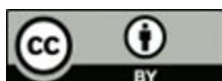
In Addition, this research provides recommendations for improving the accessibility levels of family accommodation websites in Malaysia (Rahim Wan Mohd Isa, Hakim Suhaimi, Ariffrn, Fatimah Ishak and Mohd Ralim, 2016).

In the year 2016, the evaluation of accessibility of 5 websites of the Peruvian State was carried out from its legislation, in the recommendations WCAG 1.0 and WCAG 2.0 of the W3C. To this end, the authors identified the sites that have greater access and importance at the time of the investigation. The results throw a set of deficiencies such as: color errors, audio, text, non-textual content and alt in images (Alt attribute in HTML is used to describe or contextualize an image to visually impaired people who use screen readers), errors in the interface components presented to the user, links without contents and inappropriate browsing order by tabulation (Sam-Anlas and Stable-Rodríguez, 2016).

In a study conducted in 2017, the policy evaluation of Web accessibility was carried out adopted by 51 websites of universities in the world, classified by Webometrics. The authors conclude that 44 out of the 51 evaluated universities did not reach an acceptable level of web accessibility policies. The results show that although most universities have web accessibility policies, most policies have serious problems. The deficiencies identified in this work are sufficiently serious to violate the legal accessibility rights of people with disabilities. They pose a threat to these people who can sue against the websites according to the laws and regulations executed in each country (Acosta-Vargas, Luján-Mora and Salvador-Ullauri, 2017).

In another investigation, the accessibility of 44 Ecuadorian universities was assessed using the online software examiner. From the results obtained, the authors concluded that the websites of the institutions of higher education are not accessible. None of the universities evaluated complies with the Ecuadorian Technical Regulations RTE INEN 288 which is in force and is obligatory for institutions of higher education. The average accessibility score for the Webpages analyzed is 5.0 over 10. From the 54 errors of accessibility that the Examiner tool identified and the 8.970 elements in which these errors have been incurred, it is concluded that: 59% correspond to failures in the principle of perceptible accessibility, 24% at the operable principle, 10% at robust and 7% at understandable; 50% correspond to errors in the conformity level A, and 25% in each of the conformity levels AA and AAA, respectively (Acosta and Luján-Mora, 2017).

In another research, it was stated that the accessibility of websites is an easy way for everyone to access information and be easily understood. The results of the analysis of the 13 websites of the universities analyzed in West Java, Indonesia, were presented in a graph showing the rate of errors of each university. The errors occurring in almost all the websites were: content without text, information and relationships, title of the page, purpose of the link, language of the page, language in the first page, labels and instructions, analysis and name, function, value criteria (Arasid *et al.*, 2018).

The research carried out by Acosta-Vargas, Acosta and Luján-Mora (2018) described the problems of web accessibility identified in 348 websites of universities in Latin America according to their classification in Webometrics. The results show that the websites of the universities have frequent problems related to the lack of alternative text in the images. It is observed that the websites of the universities analyzed violate the Web accessibility requirements based on WCAG 2.0. The many problems identified in the websites indicate that it is necessary to strengthen the policies of web accessibility in each country and to apply standards to make the websites more inclusive.

The research conducted by Ortiz Ruiz (2019), aimed to analyze policies and regulations in Chile that guide Web design to guarantee an accessibility level according to the current society. This research stipulates that there are laws and regulations on the rights of people with disabilities that have as a requirement an AA level for government sites developed based on the WCAG 2.0 of the W3C. Based on these references, the initial pages developed by the Ministry of Education for the access of teachers, students, proxies, parents and the general public were evaluated. All turned out to be non-accessible sites, with the most recurrent weaknesses being the absence of alternative texts in images, videos or other elements that demand it, as well as unclear links for assertive navigation and basic accessibility requirements.

In an investigation carried out in 2019, it was announced that a correct methodology should be applied in the correction of errors in the design of the websites in order to avoid poor quality products. In this way, the evaluation is a process that, in addition to visualize the different errors, becomes a quality control tool that allows to develop reliable and usable products. Nevertheless, the comparative evaluation allows to determine the errors with more presence in each of the sites under study, allowing to identify the areas that need more attention (Rodríguez V., Rosas Chávez and Suárez Naranjo, 2019).

4. Methodology

The steps used in this research are described below:

1. **Selection of educative institutions:** the information of the period 2017-2018 of the Master Archive of Educational Institutions (AMIE) of the Ministry of Education of Ecuador was used (Ministry of Education of Ecuador, 2018).
2. **Selection of a representative sample:** 29 websites were selected with the .edu.ec domain. According to the domain types in Ecuador (Network Information Center, 2019), the domain name .edu.ec is "only for entities, institutions or educational organizations such as schools, universities, schools and institutes registered in Ecuador". 7 sample websites were selected from each of the web portal, and all the portals with less than 7 websites.
3. **Evaluation of the selected pages of the Web portals:** To determine the accessibility errors of the 29 main pages and 162 Web pages, the Examinator, TAW, Markup Validation Service and CSS Validation Service online tools were used. The main pages are the first impression as well as the presentation letter given to the user who visits a website. In addition, these pages allow users to move among the other sites on the web portals.
4. **Compliance level:** In order to establish the compliance level, the icons certifying the accessibility of the sites by the W3C in HTML, CSS and their conformity levels A, AA and AAA were verified. Based on the data obtained from the evaluation of the automatic tools, the compliance level with the success criteria of the WCAG 2.0 is corroborated with a conformity level A.

5. Results

5.1   Selection of the web portals according to the.edu.ec domain

The Ministry of Education of Ecuador (2018) in AMIE, collects data from public and private institutions (students, teachers, infrastructure, among others) at the national and territorial level at the beginning and at the end of the school year. Information is available from the period 2009-2010 to 2017-2018. With the information of the period 2017-2018 it has been
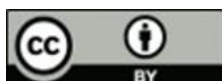
determined that there are 529 establishments among education centers, schools and educational institutions in Cuenca-Ecuador.

According to the types of domain in Ecuador, the domain name .edu.ec is "only for entities, institutions or educational organizations, such as schools, universities, schools and institutes registered in Ecuador". This has enabled to select 28 web portals with the .edu.ec domain and a portal with the .ec domain as shown in Table 2.

| Nº	Abbreviations	Educative institutions	URL web portal
1	Aaschool	Escuela de Educación Básica Particular Asian American School	www.aaschool.edu.ec
2	Adistanciabg	Colegio de Bachillerato Particular Bill Gates	colegioadistanciabg.edu.ec/index.php
3	Amauta	AMAUTA	www.amauta.edu.ec
4	Americancollege	Unidad Educativa American School	www.americanschool.edu.ec
5	Uepcc	Unidad Educativa Particular Católica de Cuenca	plantelesanexos.ucacue.edu.ec
6	Benignomalo	Unidad Educativa Benigno Malo	www.colegiobenignomalo.edu.ec
7	Casc	Colegio Alemán Stiehle de Cuenca	www.casc.edu.ec
8	catalinas	Unidad Educativa Particular Rosa de Jesús Cordero	www.catalinas.edu.ec
9	comilcue	Unidad Educativa Abdón Calderón	www.comilcue.edu.ec
10	continental	Unidad Educativa Continental	www.continental.edu.ec
11	delasallecuenca	Unidad Educativa Particular Hermano Miguel de la Salle	www.delasallecuenca.edu.ec
12	herlindatoral	Unidad Educativa Herlinda Toral	www.herlindatoral.edu.ec
13	laasuncion	Unidad Educativa la Asunción	www.laasuncion.edu.ec
14	latinoamericano	Unidad Educativa Latinoamericano	www.latinoamericano.edu.ec
15	madrid	Unidad Educativa Madrid	www.unidadeducativamadrid.edu.ec
16	manueljcalle	Unidad Educativa del Milenio Manuel J Calle	www.colegiomanueljcalle.edu.ec
17	mariorizzini	Unidad Educativa Mario Rizzini	www.mariorizzini.edu.ec
18	santana	Unidad Educativa Santana UNESA	www.santana.edu.ec
19	Sscc	Unidad Educativa Particular Sagrados Corazones	www.sscc-cuenca.edu.ec
20	sudamericano	Unidad Educativa Sudamericano	www.sudamericano.ec
21	Uebi	Unidad Educativa Bilingüe Interamericano	www.uebi.edu.ec
22	uelac	Unidad Educativa Liceo Americano Católico	www.uelac.edu.ec
23	uemo	Unidad Educativa Misioneros Oblatos	www.uemo.edu.ec
24	ueoblatas	Unidad Educativa Particular Corazón de María	www.ueoblatas.edu.ec
25	ueporvenir	Unidad Educativa Porvenir	www.ueporvenir.edu.ec
26	Uets	Unidad Educativa Técnico Salesiano	www.uets.edu.ec
27	uesmacuenca	Unidad Educativa Salesiana María Auxiliadora	www.uesmacuenca.edu.ec
28	Unidadborja	Unidad Educativa Particular Borja	www.unidadborja.edu.ec
29	Verbo	Unidad Educativa Cristiana Verbo	www.verbo.edu.ec

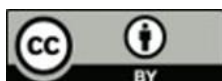Table 2. Web portals of the educative institutions of Cuenca

5.2   Selection of websites

After having made the search of the websites in the Web portals of the educative institutions of Cuenca, it is determined that the webpages that students use more frequently to make their consultations or any academic activity are:
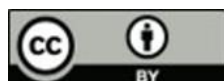
1. aaschool: Home page, the campus, virtual tour, education, languages, services, contact us
2. adistanciabg: Home page, academic information (*8vo básica*), student counseling, Secretariat, English, virtual classroom, school, high school.
3. amauta: Home page, Ecuador, about us, accommodation with families, programs, FAQS, contact us.
4. americancollege: Home page, admission process, scholarships, prices, enrollment, virtual classroom, virtual library.
5. benignomalo: Home page, students, contact us, enrollment sheet, videos, events, online library.
6. casc: Home page, kindergarten, elementary, high school, activities, admission, contact us.
7. catalinas: Home page, professors, parents, program.
8. comilcue: Home page, grades, submission of homework, contact us.
9. continental: Home page, academic information, virtual classroom, program, mission and vision, web mail, our professors.
10. delasallecuenca: Home page, about us, academic programs, academic structure, students, sports, contact us.
11. herlindatoral: Home page, ideas, section, mission, pictures, news, contact us.
12. laasuncion: Home page, Educative institutions la asunción, enter the academic system, news and events, journal indicios, virtual classroom, contact us.
13. latinoamericano: Home page, elementary, middle school, high school, academy.
14. madrid: Home page, our history, mission and vision, location, calendar, history.
15. manueljcalle: Home page, grades, monography.
16. mariorizzini: Home page, educative levels, schedule, app for the mobile, register, location, contact us.
17. santana: Home page, about santana, programs and projects, news, international high school, grades, open school.
18. sscc: Home page, academic offer, news, gallery, contact us, calendar, library.
19. sudamericano: Home page, academic program, news, admision, contact us, grades, prices.
20. uebi: Home page, events, virtual classroom, gallery, contact us, administrative staff, professors.
21. uelac: Home page, about us, gallery, contact us, news, Schedule of elementary school, events.
22. uemo: Home page, about us, elementary, middle school, high school, program.
23. ueoblatas: Home page, academic information, contact us, journalist club, grades, DECE, Institutional policies.
24. uepcc: Home page, information, enrollment from elementary to high school, enrollment for kindergarten, fee, payment distribution.
25. ueporvenir: Home page, mission and vision, Schedule for assisting the parents, location, authorities, contact us, academic follow-up
26. uesmacuenca: Home page, virtual classroom (enter page), academic information, news, letters, baccalaureate in science, elementary school.
27. uets: Home page, professors, news, location, specializations, the building, virtual classroom.
28. unidadborja: Home page, admission, elementary, middle school, high school, courses, contact us.
29. verbo: Home page, about us, the school, news, contact us, location.

Obtaining as a result 191 web pages of the portals of the educational institutions of Cuenca. Pages such as notes, task entry and virtual classroom will only be logged on for not having passwords for entry and evaluation of their contents.
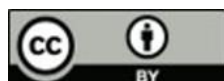
5.3   Evaluation of home pages

In order to evaluate the accessibility of the main pages, the Examinator tool presents a complete battery of 100 automatic tests, which are suitable for a first approximation towards web accessibility. It has been observed that the websites of the educational institutions were not designed with a vision of web accessibility, so the use of automatic tools allows to identify the frequent errors that the technical team at each institution can solve in the first instance (Amado-Salvatierra, Linares, García, Sánchez and Rios, 2012). After having evaluated the main pages of the web portals of the educational institutions, the results can be seen in Table 4 for each of the principles of the WCAG 2.0 perceivable (P), operable (O), understandable (U), robust (R) and HTML and CSS errors.

Using Examinator, an average of 5.43 is reached in the accessibility compliance of the home pages. With the TAW evaluation, it is determined that 86% are warnings that should be reviewed in the design and content of the main pages. 11% are problems that must be corrected according to the compliance criteria (success) of the WCAG 2.0. 3% are unverified points that require a complete manual analysis for the compliance. In the evaluation of HTML content with Markup Validation Service, 54% are errors and 46% warnings. In evaluating CSS content with CSS Validation Service, 3% are errors and 97% warnings.

A Pareto diagram was performed using the values obtained from the Examinator evaluation in order to graphically present the percentage of accessibility fulfillment of the educational institutions of Cuenca, see table 4.

Educative institutions	Pages analyzed	Examinator	TAW				Markup Validation Service	CSS Validation Service
			P	O	U	R	Errors	Errors
Aaschool	7	4.6	26	12	3	75	10	4
adistanciabg	7	8.2	73	31	6	726	0	73
Amauta	7	4.8	48	25	5	44	38	30
americancollege	7	4.6	99	41	9	38	14	13
benignomalo	7	4.8	51	27	8	17	2	42
Casc	7	5.8	104	61	2	318	10	21
Catalinas	4	5.3	129	12	2	108	3	40
Comilcue	4	5.6	74	24	6	11	288	201
continental	7	5.3	91	14	3	408	34	6
delasallecuenca	7	4.6	192	16	2	159	30	51
herlindatoral	7	5.4	90	55	9	402	385	294
laasuncion	7	3.1	16	15	3	3	92	126
latinoamericano	7	5.5	73	31	4	9	13	1
Madrid	6	5.8	8	11	2	571	10	0
manueljcalle	3	7.2	34	20	3	25	11	10
mariorizzini	7	6.3	36	21	11	10	1	9
Santana	7	5.0	35	31	5	62	3	1
Sscc	7	4.2	53	31	2	166	38	20
sudamericano	7	6.1	59	41	9	13	15	24
uebi	7	5.2	137	35	20	442	1	8
uelac	7	5.5	47	27	11	303	23	35
uemo	7	5.3	214	37	10	1113	5	10
ueoblatas	7	5.9	41	30	5	170	21	9
uepcc	6	5.7	27	20	13	452	5	19

ueporvenir	7	5.4	37	26	2	16	13	123
Uesmacuenca	7	4.5	200	24	2	125	36	33
Uets	7	7.5	72	31	7	661	28	12
unidadborja	7	5.6	356	116	2	181	18	143
verbo	7	4.7	38	25	5	71	39	18
TOTAL:	**191**	**157.5**	**2460**	**890**	**171**	**6699**	**1186**	**1376**
Total errores / páginas:		**5.43**	**12.9**	**4.7**	**0.9**	**35.1**	**6.2**	**7.2**

Table 4. Accesibility analysis of the home pages of educative institutions in Cuenca
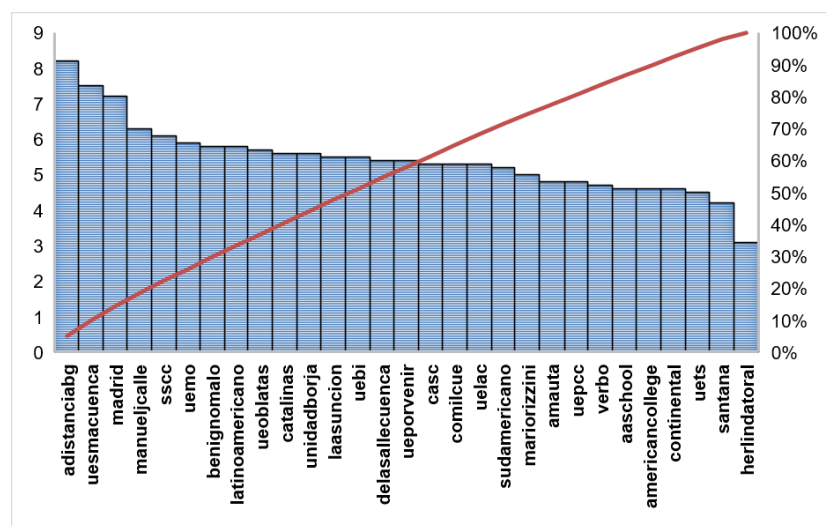
Figure 2. Pareto diagram of the educative institutions of Cuenca

5.4 Evaluation of the web portals

After having evaluated the web portals of the educative institutions. The errors are determined by each of its perceivable (P), operable (O), understandable (U) and robust (R) principles, and finally the errors HTML and CSS, as can be seen in Table 5.

Educative institutions	Pages analyzed	TAW				Markup Validation Service Errors	CSS Validation Service Errors
		P	O	U	R		
aaschool	7	250	120	21	555	25	4
adistanciabg	7	332	191	49	3923	32	32
amauta	7	284	115	35	321	31	30
americancollege	7	320	248	64	367	6	25
benignomalo	7	246	154	44	72	10	36
Casc	7	342	189	30	2232	5	21
catalinas	4	366	43	12	375	3	40
comilcue	4	200	62	29	40	95	67
continental	7	473	115	34	1646	10	1
delasallecuenca	7	997	92	20	870	17	36
herlindatoral	7	435	189	55	1949	313	237
laasuncion	7	271	184	61	283	15	51
latinoamericano	7	491	84	17	57	8	17
madrid	6	72	66	11	2888	2	0
manueljcalle	3	71	38	13	30	30	9
mariorizzini	7	96	78	38	23	5	1
santana	7	132	128	33	315	5	1
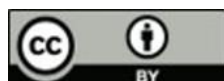
Sssc	7	454	499	44	1177	28	28
sudamericano	7	578	225	64	969	18	23
uebi	7	424	187	91	2837	7	8
uelac	7	390	202	76	1756	5	16
uemo	7	501	147	58	7435	8	10
ueoblatas	7	244	137	76	1026	13	6
uepcc	6	358	163	64	2827	14	17
ueporvenir	7	238	146	33	151	17	120
uesmacuenca	7	704	126	52	552	29	34
Uets	7	736	252	43	3828	172	26
unidadborja	7	712	466	38	1106	6	139
verbo	7	258	168	50	498	28	18
TOTAL:	**191**	**10975**	**4814**	**1255**	**40108**	**958**	**1054**

Table 5. Accessibility analysis of the web portals of the educational institutions of Cuenca

With the TAW evaluation, it is determined that 87% are warnings that should be reviewed in the design and content of the Web pages. 9% are problems that must be corrected according to the compliance criteria (success) of the WCAG 2.0. 4% are unverified points that require a complete manual analysis for their compliance. In the evaluation of HTML content with Markup Validation Service, 52% are errors and 48% warnings. In evaluating CSS content with CSS Validation Service, 3% are errors and 97% warnings.

It is worth mentioning that errors in Markup Validation Service (HTML) and CSS Validation Service were averaged as a final result, since the errors were identical, because the same HTML and CSS code were used on all web pages of the Web portal. In Table 6, the summary of the errors of the web portals of the 29 educational institutions can be seen.

	P	O	U	R	Errors HTML	Errors CSS
Minimum	71	38	11	23	2	0
Mean	342	147	43	870	14	23
Media	378.4	166	43.28	1383	33.07	36.31
Maximum	997	499	91	7435	313	237

Table 6. Summary of accessibility errors of web portals

The greatest number of errors is in the robust (R) principle, because the analyzed web pages are not robust enough to be reliably interpreted by a wide variety of user agents, including technical aids (processing, name, function, and value). Correcting errors in HTML or XHTML markup languages and CSS cascading style sheets on web portals will contribute to compliance with the principles of WCAG 2.0 and its compliance levels.

5.5 Compliance level

After having analyzed the web portals of the educational institutions of Cuenca, Ecuador, it is observed that none has the icons that certify the accessibility of the sites by the W3C in HTML, CSS or its conformity levels A, AA and AAA. According to the results obtained, it is determined that it is necessary to correct errors in all the web portals analyzed of the educational institutions of Cuenca. It is evident the non-fulfilment with the first transitory of the Ecuadorian technical regulation RTE INEN 288, which establishes that all the Ecuadorian websites that provide a public service must be accessible WCAG 2.0 level A until August 8, 2018. Educative institutions must undertake with responsibility the regulatory compliance of existing accessibility to provide universal access to their web portals.

6. Conclusions

The greatest number of errors is because the analyzed web pages are not robust enough. The content must be robust so that it can be interpreted by a wide variety of user agents, including supportive technologies. The 22 websites of educational institutions use content management systems[5] (8 WordPress, 9 Joomla, 3 DNN and 2 Wix), the remaining 7 are designed and programmed. The previous assessment provides a first impression of the structure and design of the websites, considering that the results are preliminary. In order for the results to be reliable and complete, manual tests should be carried out with experts.

Despite the importance of web accessibility, its fulfillment in the Web portals of the educational institutions analyzed is limited. It is necessary to correct errors in all the analyzed web portals of the educative institutions of Cuenca. For the average number of errors found, it is more feasible for educational institutions to redesign their web portals in order to comply with the web accessibility guidelines. They can also improve the fulfillment of the WCAG 2.0, with a hard work of revising and correcting the source code of their web portals. For this, developers must understand accessibility, learn how to implement it and know its legal obligations. The benefits would be to provide universal access to the web and improve its usability. According to WHO statistics (Banco Mundial, 2011, pág. 5), and CONADIS (Consejo Nacional para la Igualdad de Discapacidades, 2019) people with disabilities increase by leaps and bounds and web accessibility is a mechanism that improves the quality of life of these people.

The use of the standard NTE INEN-ISO/IEC 40500 in Ecuador requires that the web portals of the educational institutions of Cuenca be accessible. This is a hard work that software developers must undertake to meet the web accessibility guidelines and their compliance levels. If developers or programmers are not aware of the current regulations and apply it in the development of web pages, then universal access to the web is not being promoted. The challenge of the educative community is to undertake web accessibility projects for the fulfillment of the WCAG 2.0 on their websites with a conformity level AA, as established in the Ecuadorian technical regulations RTE INEN 288 "Accessibility for Web content" until August 2020. A limitation of this research is the size of the sample taken from the Web portals of the educational institutions of Cuenca, which does not make it possible to generalize the results obtained.

Acknowledgment

---

[5] Content management systems (CMS): ¿which CMS is used by this site? Obtained by https://whatcms.org/

References

Acosta, T., y Luján-Mora, S. (2017). Análisis de la accesibilidad de los sitios web de las universidades ecuatorianas de excelencia. *Enfoque UTE, 8*(1), págs. 46-61. doi:10.29019/enfoqueute.v8n1.133

Acosta-Vargas, P., Acosta, T., y Luján-Mora, S. (2018). Challenges to Assess Accessibility in Higher Education Websites: A Comparative Study of Latin America Universities. *IEEE Access*, *6*, págs. 36500-36508. doi:10.1109/ACCESS.2018.2848978

Acosta-Vargas, P., Luján-Mora, S., y Salvador-Ullauri, L. (2016). Evaluation of the web accessibility of higher-education websites. *15th International Conference on Information Technology Based Higher Education and Training (ITHET)*, (págs. 1-6). Estambul. doi:10.1109/ITHET.2016.7760703

Acosta-Vargas, P., Luján-Mora, S., y Salvador-Ullauri, L. (2017). Web accessibility polices of higher education institutions. *16th International Conference on Information Technology Based Higher Education and Training (ITHET)*, (págs. 1-7). Ohrid. doi:10.1109/ITHET.2017.8067808

Amado-Salvatierra, H., Linares, B., García, I., Sánchez, L., y Rios, L. (2012). Análisis de Accesibilidad Web y Diseño Web Accesible para instituciones socias del proyecto ESVI-AL. *Actas del IV Congreso Internacional sobre Aplicación de Tecnologías de la Información y Comunicaciones Avanzadas*, (págs. 54-61). Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.679.9927&rep=rep1&type=pdf#page=55

Arasid, W., Abdullah, A. G., Wahyudin, D., Abdullah, C. U., Widiaty, I., Zakaria, D., . . . Juhana, A. (2018). An Analysis of Website Accessibility in Higher Education in Indonesia Based on WCAG 2.0 Guidelines. *{IOP} Conference Series: Materials Science and Engineering. 306*, págs. 1-8. {IOP} Publishing. doi:10.1088/1757-899x/306/1/012130

Banco Mundial. (2011). Informe mundIal la dIscapacIdad. *Educación, 218*(219), 219. Retrieved from http://www.who.int/disabilities/world_report/2011/summary_es.pdf

Campoverde-Molina, M. (2016). La accesibilidad web. Un reto en el entorno educativo ecuatoriano. *Revista Científica y Tecnológica UPSE, III*(3), págs. 90-98.

Campoverde-Molina, M., Vizñay-Durán, J., y Reyes-Espinosa, D. (2016). Accesibilidad web en las instituciones de salud de la ciudad de Cuenca. Análisis preliminar. *IV Conferencia Internacional sobre Aplicación de Tecnologías de la Información y Comunicaciones para mejorar la Accesibilidad (ATICAcces 2016)*, *1*, págs. 125-132. Cuenca.

Confederación de Empresarios de Andalucía. (2010a). *Accesibilidad Web*. Retrieved from http://webaccesible.cea.es/?q=nivelesWCAG20

Confederación de Empresarios de Andalucía. (2010b). *Herramientas de evaluación automáticas*. Retrieved from http://webaccesible.cea.es/?q=automaticas
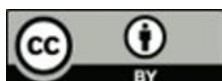
Consejo Nacional para la Igualdad de Discapacidades. (2015). *Estadística personas con discapacidad*. Retrieved from http://www.consejodiscapacidades.gob.ec/wp-content/uploads/downloads/2015/09/estadistica_conadis.pdf

Consejo Nacional para la Igualdad de Discapacidades. (2019). *Estadísticas de Discapacidad*. Retrieved from https://www.consejodiscapacidades.gob.ec/estadisticas-de-discapacidad/

Instituto Ecuatoriano de Normalización. (2014). *Tecnología de la información - Directrices de accesibilidad para el contenido web del W3C (WCAG) 2.0*. Retrieved from https://drive.google.com/file/d/0Bxl4LLo2QyyJMmZDNGwzWEdHMGc/view

Instituto Ecuatoriano de Normalización. (2016). *Reglamento técnico ecuatoriano RTE INEN 288 "accesibilidad para el contenido web"*. Retrieved from https://drive.google.com/file/d/0Bxl4LLo2QyyJdURfOHViRGpCNFU/view

International Organization for Standardization. (2012). *Information technology -- W3C Web Content Accessibility Guidelines (WCAG) 2.0*. Retrieved from https://www.iso.org/standard/58625.html

Luján-Mora, S. (2018a). *Herramientas de revisión automática de la accesibilidad web*. Retrieved from http://accesibilidadweb.dlsi.ua.es/?menu=hr-revision-automaticas

Luján-Mora, S. (2018b). *Principios y directrices de WCAG 2.0*. Retrieved from http://accesibilidadweb.dlsi.ua.es/?menu=principios-2.0

Ministerio de Educación del Ecuador. (2018). *AMIE (Estadísticas educativas a partir de 2009-2010)*. Retrieved from https://educacion.gob.ec/amie/

Naciones Unidas. (2006). *Convención sobre los derechos de las personas con discapacidad.* Retrieved from http://www.un.org/disabilities/documents/convention/convoptprot-s.pdf

Network Information Center. (2019). *Tipos de dominios*. Retrieved from https://www.nic.ec/content.php?action=mypages&page=TipoDominios.html

Ortiz Ruiz, Y. T. (2019). Accesibilidad en sitios web del Ministerio de Educación de Chile. *Tendencias Pedagógicas, 33*(2019), págs. 99-116.

Rahim Wan Mohd Isa, W. A., Hakim Suhaimi, A. I., Ariffrn, N., Fatimah Ishak, N., y Mohd Ralim, N. (2016). Accessibility evaluation using Web Content Accessibility Guidelines (WCAG) 2.0., (págs. 1-4). Melaka. doi:10.1109/IUSER.2016.7857924

Rodríguez V., L., Rosas Chávez, P., y Suárez Naranjo, C. (2019). Análisis comparativo de usabilidad en los sitios web de las universidades públicas de la ciudad de Riobamba - Ecuador. *Atlante: Cuadernos de Educación y Desarrollo, febrero*, págs. 1-14.

Sam-Anlas, C. A., y Stable-Rodríguez, Y. (2016). Evaluación de la accesibilidad web de los portales del Estado en Perú. *Revista Española de Documentación Científica, 39*(1), págs. 1-15.

Stamford Interactive. (2012). *WCAG 2.0 Map*. Retrieved from https://www.digitalpulse.pwc.com.au/wp-content/uploads/2014/08/WCAG20Map.pdf

World Wide Web Consortium. (2006). *Web Accessibility Evaluation Tools List*. Retrieved from https://www.w3.org/WAI/ER/tools/

World Wide Web Consortium. (2008). *Web Content Accessibility Guidelines (WCAG) 2.0*. Retrieved from http://www.w3.org/TR/WCAG20/

World Wide Web Consortium. (2015). *Introducción a la Accesibilidad Web*. Retrieved from https://www.w3c.es/Traducciones/es/WAI/intro/accessibility

World Wide Web Consortium. (2018). *Web Content Accessibility Guidelines (WCAG) 2.1*. Retrieved from https://www.w3.org/TR/WCAG21/
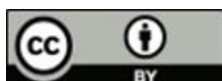
Authors

MILTON CAMPOVERDE-MOLINA obtained his Master's degree in Evaluation and Audit of Technological Systems at Universidad de las Fuerzas Armadas - ESPE (Ecuador) in 2015. He obtained a Master's degree in University Teaching at Universidad de las Fuerzas Armadas - ESPE (Ecuador) in 2014. He obtained the title of Systems Engineering by the Academic Unit of Information and Communication Technologies of Universidad Católica de Cuenca (Ecuador) in 2009. He obtained the title of System Analyst and Technologist from the Academic Unit of Information and Communication Technologies of Universidad Católica de Cuenca (Ecuador) in 2007.

He is currently a tenured professor of the Academic Unit of Information and Communication Technologies of Universidad Católica de Cuenca (Ecuador). His main research topics include web accessibility, disabilities, web development, pedagogy. He is the author of chapters of books and articles published in several journals.

LLORENÇ VALVERDE obtained a bachelor's degree in Mathematics (1976) from Universidad de Barcelona and a PhD in Computer Science (1982) from Universidad Politécnica de Cataluña. He is a professor at Universidad de las Islas Baleares since 1989, he was the director of the Mathematics and Informatics department from 1994 to 2003. From January 2006 to July 2013 he was the technology vice-rector of Universidad Abierta de Cataluña. In 1985 he received the Barcelona Prize for Studies and Research in Cognitive Science and Logic, while he was a professor at Universidad Politécnica de Cataluña, from which he became professor in 1988. He has carried out several research stays in universities and centers in Europe and also in the United States. His research activity has focused on the study of models by the approximate reasoning and by default. He is author and coauthor of numerous scientific articles and editor of several books published by prestigious specialized Publishing House. His teaching activity has focused primarily on subjects related to mathematical methods, taught in the studies of Architecture, Informatics and Mathematics.

He regularly collaborates in the media and has published several works on the new relations between technology, culture and education established by the digitalization and expansion of the Internet. He is the author of several scientific-technical dissemination books, the last of which has been published by the UOC Publishing House with the title "Seven failures that have changed the world: From dishwasher to mobile telephony" (2014).
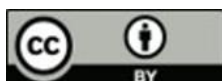
Perfiles de virtuosidad en organizaciones escolares en relación con los niveles de bienestar psicológico en adolescentes ecuatorianos

Virtuousness profiles in school organizations in relations to psychological well-being levels in Ecuadorian adolescents

Fernando Unda-Villafuerte

Ministry of Public Health of Ecuador, Universidad Central del Ecuador, Quito, Ecuador
fsunda@uce.edu.ec
https://orcid.org/0000-0002-4958-2529

María Laura Lupano-Perugini

National Board of Scientific and Technical Research, Universidad de Palermo, Buenos Aires, Argentina
mlupan1@palermo.edu
https://orcid.org/0000-0001-6090-0762

Resumen

El estudio tuvo como objetivos analizar la relación entre virtudes percibidas en organizaciones escolares positivas y los niveles de bienestar psicológico en adolescentes y; establecer perfiles de organizaciones escolares positivas o virtuosas considerando, por un lado, el género y tipo de financiamiento y, por otro, los niveles de bienestar psicológico presentes en adolescentes ecuatorianos. La investigación se justifica por la necesidad de generar espacios y estrategias de socialización y aprendizaje que potencien el desarrollo integral de chicos y chicas y su bienestar perdurable en contextos influenciados por el placer
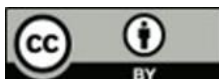
instantáneo y de alta intensidad. Para el estudio se consideró una muestra de 550 estudiantes (51,7% hombres). Los instrumentos aplicados fueron la escala de virtuosidad percibida en organizaciones escolares y la escala de bienestar psicológico en adolescentes, los mismos se hallan validados a los contextos ecuatorianos. Como resultado del análisis estadístico se evidenció una correlación moderada entre las variables de estudio. Adicionalmente se llevaron a cabos dos procesos estadísticos: análisis de conglomerados y análisis de varianza (ANOVA), de esta forma se establecieron perfiles de bienestar psicológico en adolescentes en función del nivel de virtuosidad percibida en las organizaciones escolares. El análisis mencionado dio lugar a tres niveles de organizaciones escolares (virtuosas, en tránsito a la virtuosidad y poco virtuosos) que interactuaron en su orden con tres niveles de bienestar psicológico (fortalecido, en proceso de construcción y vulnerable). Finalmente, en el acápite conclusiones se formularon estrategias puntuales para generar organizaciones virtuosas vinculadas con mejores niveles de bienestar en estudiantes.

Palabras clave:

Adolescencia, bienestar psicológico, organizaciones escolares, psicología positiva, virtuosidad.

Abstract

The purpose of this study was to analyze the relationship between perceived virtues in positive school organizations and levels of well-being in adolecents; and to establish profiles of positive or virtuous school organizations considering, on the one hand, the gender and type of funding and, on the other, the levels of psychological well-being present in Ecuadorian adolescents. The research is justified by the need to generate spaces and strategies for socialization and learning that enhance the integral development of boys and girls and their lasting well-being in contexts influenced by instantaneous pleasure and high intensity. For the study, a sample of 550 students (51.7% men) was considered. The research applied two instruments validated to Ecuadorian contexts: the scale of perceived virtuousness in school organizations and the scale of psychological well-being in adolescents. As a result of the statistical analysis, a moderate correlation was observed between the study variables. Subsequently, and in order to enhance the analysis, a cluster analysis of k average and a variance analysis (ANOVA) of one factor were carried out to establish profiles of psychological well-being in adolescents according to the level of virtuosity perceived in school organizations. The aforementioned analysis originated three levels of school organizations (virtuous, in transit to virtuousness and little virtuousness) that interacted in their order with three levels of psychological well-being (strengthened, under construction and vulnerable). Finally, in the conclusions, specific strategies were formulated to generate virtuous organizations linked with better levels of well-being in students.

Keywords:

Adolescence, Positive Psychology, psychological well-being, school organizations, virtuousness.

1. Introduction

The scientific literature agrees in the fact that adolescence is the period between childhood and adulthood characterized by an accelerated set of physiological, psychological and

physical changes that begin with the first ejaculation in males and first menstruation in women. The United Nations Children's Fund (2011) explains that adolescence is a difficult term to explain, because "physical, emotional and cognitive maturity, among other factors, depends on how each individual experiences this period of life" (p. 8). In operational and public policy terms, adolescence is recognized as the period of life between 10 and 19 years, defining two stages: Early adolescence (10 to 14 years old) and late adolescence (15 to 19 years old). Likewise, it is important to differentiate between puberty and adolescence, the first one refers to "a biological process in which the development of secondary sexual characters occurs, the maturation of the gonads and adrenal glands and the acquisition of the peak of bone mass, fat and muscular mass" (Güemes-Hidalgo *et al.*, p. 8); while the second has to do with physical, psychosocial, emotional and cognitive markers that begin with puberty and finishes in the second decade of life. In general terms, the Ecuadorian educational system contemplates the level of higher basic education that is related to the early adolescence and the high school that coincides with the late adolescence.

The biological and psychological changes generated in adolescence under the influence of specific social and cultural contexts, can lead to behaviors that allow a healthy life and an integral development or, on the contrary, can cause consequences such as risky and unhealthy behaviors. Identifying protective or risk factors constitutes a key element in the integral well-being of adolescence; however, González and Rivera (2016) agrees that "the psychological adjustment or mismatch is not predetermined by the presence of risks in the development, but by the combination of variables that end up in adaptive and disadaptive patterns" (p. 48).

In contemporary societies the family, the school, the group of friends and the virtual interaction constitute essential spaces of socialization. In adolescence, there is evidence of a gradual questioning of the family and its norms and an approach to the groups through virtual mechanisms and direct contact. Many of the socialization processes take place in the school, which "imposes to its students a way of being and of acting, a morality and some values, its main role will be to educate not only in the academic version of the concept but also moral, social and normative" (Navarro-Pérez *et al.*, 2015, p. 147). The ecological perspective raised determines that school, family and educational policies develop strategies that derive from the integral development of adolescents.

The positive school, as a space for the integral development of adolescents, seeks to strengthen skills and competencies that result in the psychological well-being of boys and girls understood as practices, attitudes and knowledge that enable improved levels of personal and social satisfaction. However, "contaminated educational environments generate in the adolescent anguish, frustration, hinder learning and socialization" (Navarro-Pe rez *et al.,* p. 147). Current trends in educational psychology, psychopedagogy and evolutionary psychology pose that the psychological well-being and the satisfaction for the life in the adolescence goes through "to know the positive aspects and to strengthen those factors that can help to improve their mechanisms of adaptation and their integral health, in terms of physical and emotional wellbeing that allow to continue as full individuals within their communities" (Barcelata and Rivas, 2016, p. 120).

In this research, educational establishments that enable psychological well-being as part of the integral development of adolescents are defined as positive or virtuous school organizations; while those institutions that do not link their priorities to the psychological well-being of their students are considered non-virtuous school organizations. In any case,
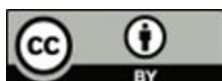
it is part of the understanding of the school as a privileged space of socialization of adolescents that will influence decisively in their growth and development.

The analysis of variables (perceived virtuosity in school organizations and psychological well-being in adolescents) considered the theoretical and fundamentals principles of positive psychology understood as the scientific approach to experience human from "the pleasurable life that gives rise to the study of positive emotions; the committed life related to the study of personal strengths and virtues, and the functioning of the positive institutions" (Lupano-Perugini and Castro-Solano, 2010, p. 48). The option for this approach was based on the need to have a valid and updated referential framework that allows to identify scientific alternatives aimed at enhancing the integral development of adolescents and to influence in a positive way on their spaces of daily socialization.

In this way, the study carried out was aimed at analyzing the relationship between perceived virtues in positive school organizations and the levels of well-being, and to establish profiles of positive or virtuous school organizations considering, on the one hand, the gender and type of financing and, on the other, the levels of psychological well-being in Ecuadorian adolescents. It should be noted that the process developed takes into account the social and cultural contexts of the Ecuadorian reality.

This article first discusses the approaches and theoretical foundations from which the research was conducted. The positive psychology is presented as the conceptual framework of the work carried out and the place from which the scopes of the analyzed variables are explained. The understandings of the perceived virtuosity are defined in school organizations and of the psychological well-being present in adolescents. Later, the methodological design of the research is presented as well as the instruments used and the procedures employed. The results obtained are taken into consideration. Finally, conclusions from the study are structured and topics of future research are identified and some major limitations found in the research are established.

2. Positive Psychology

Lupano-Perugini and Castro-Solano (2010) explain the origin and scope of positive psychology as:

> The beginning of positive psychology is indicated in 1998 with the inaugural speech of Martín Seligman as president of the American Psychological Association... It emerges as a response to disease-centered approaches to psychology and evidence of subjects' weaknesses. The concern and interest in the study of human well-being and the factors that contribute to it are not exclusive of positive psychology... However, the merit that corresponds to the positive psychology is to have integrated in a theoretical corpus but with ample empirical validation the mentioned topics of interest (pp. 43-44).

Seligman (2003) raises the need to move towards a more positive psychology when it points out that "psychology is not only the study of weakness and harm, it is also the study of strength and virtue; treatment is not just fixing what is broken, it is also feeding the best of us" (p. 126). From the exposed perspective, positive psychology constitutes "the scientific study of the positive experiences, the positive individual traits, the institutions that facilitate their development and the programs that help to improve the quality of life of the individuals, while preventing or reducing the incidence of psychopathology" (Seligman and

Csikszentmihalyi, 2000, p. 5). On the other hand, Jiménez (2014) points out that positive psychology "provides a fuller view of the human being contemplating both negative and positive emotions in order to live a fuller, more committed life without losing sight of the person as unique and unrepeatable individual" (p. 622).

Salanova and Llorens (2016) explain that the positive must be understood from two dimensions: "One related to the presence of something that by its quality is positive, such as joy, positive relationships, etc.; and another that has to do with the preference, with something valuable and meaningful" (p. 161). In this way, the positive is linked to high levels of happiness in individuals and societies from a point of view that exceeds the hedonic pleasure (immediate) and focuses on the vital satisfaction with meaning (Eudaimonic). It is also important to note that the positive is not displayed only as the opposite of the negative, but as a mechanism to know and interact on the integral development of human beings and their wellbeing. Finally, the positive is related to better levels of performance of the individuals and organizations in which they develop.

In relation to the latter, positive psychology constitutes a scientific discipline that addresses the human being considering his abilities, capacities and positive emotions that originates a full life and the integral well-being. The positive, reflected in the wellbeing and quality of life, constitutes the object of study of the positive psychology. Thus, this discipline is based on the rigorousness of the scientific method applied to the analysis and understanding "of the optimal psychic functioning of individuals, groups and institutions" (Castro-Solano, 2012, p. 8). Seligman *et al.* (2005) identify three pillars that shape positive psychology by explaining it as "a term for the study of positive emotions (pleasurable life); positive traits (compromised life) and the functioning of positive organizations (life with meaning)" (p. 410); these three pillars were added to the post of the social linkages (positive relations).

The study of the school, as a school organization that promotes or limits the integral development of girls, children and adolescents, is part of the pillar of the positive organizations and involves the group of actors of the educational community (decision-makers, teachers, students, parents and administrative officers). The school appears as a privileged space to generate protective factors and to prevent risk factors in adolescences that enable the integral and positive development of boys and girls. The design and implementation of socio-educational strategies and interventions that consider variables such as motivation, leadership, emotional intelligence, metacognitive abilities, social practice, among others, will contribute to achieve the objective described. According to Salanova and Llorens (2016), positive interventions (or positive psychology) are "strategies that are implemented to improve the development and satisfaction of people with the ultimate goal of promoting health, quality of life and excellence" (p. 163).

Castro-Solano (2010) affirms that the role of the educational psychologist, from the traditional psychology, has been limited to the "administration of psycho-educational practices to children and adolescents with learning disorders, to the psychological orientation to parents of young people with problems and the tasks of counseling and educational guidance" (p. 35). Additionally, the design and implementation of school programs for families and actions aimed at preventing peer violence and alcohol and drug use should be added, as well as support for teachers in the design of curricular adaptations according to the students' learning needs. From a positive intervention in the school, the Operation Model of the Departments of Student Counseling has 5 key axes in the work of the educational psychologist and the educational psychologist that have to do with the promotion and prevention of the psychological well-being, detection of situations of risk,

educational interventions, case referral and case follow-up (Ministerio de Educación, 2016, pp. 21-34).

3. Positive school organizations (virtuous)

The third pillar of positive psychology and positive organizations is approached from positive organizational psychology understood as "the study and application of positive capacities and strengths that can be measured, developed and effectively managed to improve performance" (Nelson and Cooper, 2007, p. 137). Lupano-Perugini (2017) justifies the emergence of positive organizational psychology by explaining that traditionally organizational psychology emphasized the approach of negative situations and their consequences "so an alternative perspective is required that would guarantee optimal results and does not focus only on the aspects that prevent it" (p. 37). On the other hand, Salanova, Llorens and Martínez (2016), define positive organizational psychology as:

> The scientific study of the optimal functioning of the health of people and the groups in the organizations, as well as of the effective management of the psychosocial well-being in the work and the development of organizations to make them healthier (p. 177).

In this third way, among the areas of interest can be mentioned the main spaces for socialization of children and adolescents such as the family, the school, the group of friends and the community seen as institutions that build positive interactions. Lupano-Perugini and Castro-Solano (2010) explain that "this third way is the application of personal strengths for the development of something more important and broad, i.e., it is to be able to apply the strengths to help others and make them develop their potentialities" (p. 48).

Peterson (2006) identifies the virtues in positive organizations as "the moral characteristics of the organization as a whole that go beyond the individual characteristics of each of its members; as such, virtues at the organizational level are a lasting part of the organizational culture" (p. 1152). Lupano-Perugini (2017) emphasizes that "organizational virtues are defined as moral attributes or practices (justice, respect, dignity, among others) at the global level within an organization and not as the sum of the individual virtues of its members" (p. 37).

Theoretical reflection and empirical research in positive organizational psychology determines the use of the term virtues to define individual characteristics linked to strengths and positive values; while the term virtuosity refers to collective characteristics present in organizations defined as positive and that are the sum of the virtues of its members. Cameron (2012) raises that:

> The term 'virtues' refers to individual attributes representing goodness and moral excellence, traits that indicate the best qualities of humanity; while the term 'virtuosity' refers to the set of virtues that are manifested as behaviors, processes and routines in organizational environments (p. 2).

According to the above, the study and promotion of virtuosity in organizations defined as positive becomes a primary purpose of positive organizational psychology. Empirical

research determines that virtuosity presents two basic qualities: amplification and buffering. Lupano-Perugini and Castro-Solano (2018) explain that:

> The amplifier quality is related to the fact that the exposure to positive practices increases the levels of positive emotions, social capital and pro-social behaviors, which feeds the practices and favors the consequent obtaining of better organizational results. On the other hand, the buffering quality is related to helping to prevent negative effects due to stressful situations, promoting in the members a sense of resilience, solidarity and efficacy (p. 2).

Palomera (2017) argues that positive schools or with high levels of virtuosity are those that promote well-being and learning from "respect and value of happiness; stimulating, flexible and varied methodologies; spaces and times for happiness; respect for the voices of children and adolescents; attitude of teachers, and teacher training" (p. 68-69). The construction of perceived virtues in school organizations considered four virtues (gratitude, inspiration, forgiveness, courage) of the six virtues identified for labor organizations by Cameron *et al*. (2011):

> 1) Care, understood as concern, interest and responsibility for oneself and others; 2) courage, referring to mutual support and value by those who fight; 3) forgiveness, understood as avoiding blame and forgiving errors; 4) Inspiration, related to what is learned from others; 5) meaning linked to valuation; and, 6) gratitude seen as integrity, respect and appreciation (p. 37).

4. Psychological well-being in adolescents

The notion of well-being is intimately linked to integral health, the latter being understood as "a state of complete physical, mental and social well-being, and not only as the absence of conditions or diseases" (World Health Organization, 2006, p. 1). Psychological well-being is one of the main topics of positive psychology. Casullo (2002) defines well-being as "the perception that a person has about the achievements obtained in his life, the degree of personal satisfaction with what he did, does or can do from a strictly personal look" (p. 11). Romero-Carrasco *et al*. (2007) explain that two basic perspectives encourage discussion about wellbeing. The first called hedonic states that wellbeing consists of "subjective happiness built on the experience of pleasure in the face of displeasure, including judgments on the good and evil elements of life" (p. 336). The second perspective called Eudaimonic establishes that wellness has a relationship with "experiences related to feeling alive and realized, to see the activity that is done as something that fills and with the impression that what we do makes sense" (p. 336). The hedonic perspective is linked to the subjective well-being defined as "a broad category of phenomena that includes people's emotional responses, satisfaction with domains, and global judgments on satisfaction with life" (Diener *et al.,* 1999, p. 277). On the other hand, the Eudaimonic perspective is related to the psychological well-being understood as "a fundamental evaluative dimension that has to do with the valuation of the result obtained with a certain form of having lived" (Castro-Solano, 2009, p. 47).

Castro-Solano (2011) says "that the routes related to the eudaemónico welfare (compromised life and life with meaning) will have more relation with the vital satisfaction that the route referred to the hedonic welfare (pleasant Life)" (p. 42). Ryff (1989) develops

a model designed to explain the psychological well-being related to the positive functioning of individuals, this model is integrated by six interrelated dimensions: "1) Acceptance; 2) positive relationships with others; 3) autonomy; 4) domain of the environment; 5) purpose in life; and 6) personal growth" (p. 1071).

Well-being becomes a triad construct formed by positive emotions and negative labile and momentary emotions (emotional states), and by a more stable cognitive component (psychological well-being) that allows people to evaluate how they go in life. Casullo and Castro-Solano (2000) explain that "a person has a high well-being if he experiences satisfaction with his life, if his mood is often good and only occasionally experiences unpleasant emotions such as sadness or rage" (P. 37).

Based on the theoretical proposals of Ryff and the conclusions of his own empirical research, Castro-Solano and Casullo (2001) study, validate and explain the following dimensions that shape psychological well-being in adolescents: "Control of situations (sense of control and self-competence), psychosocial linkages (quality of personal relationships), projects (goals and purposes in life) and acceptance (feeling of well-being with oneself)" (p. 49). Páramo *et al*. (2012) explain the significance of high scores in the dimensions of adolescent psychological well-being:

> 1) Autonomy: they reflect the capacity to make decisions and to evaluate the logical consequences of the actions undertaken; 2) affective (psychosocial) linkages: they indicate a good ability to establish social relationships based on affection and empathy; 3) Purpose with life (projects): They point goals and objectives to be achieved; 4) Self-acceptance: it relates to the qualities of self-determination, independence and regulation of behavior (p. 11).

5. Methods and analysis

The study described was quantitative type with correlational cross-section. A non-probabilistic sample of 550 adolescents enrolled in the baccalaureate level was used; since the idea was to maintain a balance in terms of the sex of the participants, it was considered a 51.3% of boys and 49.7% of girls with an average age of 16 years old, 0 months and a standard deviation of 4.67. The established sample corresponded to students of campuses financed with resources of the national State (71.3%), and with resources from the municipalities or autonomous decentralized governments (28.7%). It should be noted that for the development of the research, the students voluntarily participated and their families provided their informed consent through a signed document.

The instrument used for the measurement of positive virtues in educational establishments was the scale of virtuosity perceived in school organizations built and validated by Unda-Villafuerte (2018, pp. 95-104) based on the theory and dimensions on positive practices developed by Cameron *et al*. (2011, p. 6). The instrument considers a Likert-type scale of five options (from totally agreeable to totally disagree), four factors (gratitude, inspiration, forgiveness and courage) and 24 items. The instrument, which responds to the contexts and socio-cultural reality of Ecuador, presents good properties of validity and reliability and was applied to a group.

For the measurement of psychological well-being in adolescents, the scale of psychological wellbeing in adolescents – Ecuador, adapted by Unda-Villafuerte (2018, pp. 104-111), was taken into account from a similar instrument worked by Castro Solano and Casullo (2001,

p. 68) in Argentina and the theory of psychological well-being in adolescents developed by Ryff (1989, pp. 1069-1081). The instrument considers a Likert-type scale of three options (in disagreement, neither in agreement nor in disagreement, in agreement) formed by 13 items and four dimensions (acceptance, projects, links and autonomy). The instrument, which responds to the contexts and socio-cultural reality of Ecuador, presents good properties of validity and reliability and was applied to a group.

From the tabulation of the raised information, the correlation index between the dimensions corresponding to perceived virtues and those of psychological well-being in adolescents was calculated. Then, by analyzing clusters or type K conglomerates groups linked to the psychological well-being in adolescents were established, and the distribution of three selected groups was confirmed through an ANOVA analysis of a factor. Then, following the processing of conglomerates with K means and ANOVA with a factor, profiles of virtuous organizations were defined based on the types of defined psychological well-being. Data processing and information analysis was carried out with the help of the statistical program SPSS 23.0.

6. Results

The first statistical process developed had to do with correlational analysis among the virtuosity variables perceived in school organizations and psychological well-being in adolescents (Table 1), the process took into account what was established by Cohen (1998) who poses as "moderate correlations the values equal to or greater than .30, and as small correlations those higher than .25 and minors to .30" (p. 115). From the mentioned logic, positive correlations were observed in all crosses with a size of the effect that goes from small, in few cases, to moderate, in most cases. When analyzing the relationships between dimensions, moderate correlations can be observed in 75% of crosses of the dimensions studied.

Virtuosity dimensions (VP)	Psychological well-being dimension (BIEPS)				BIEPS (total)
	Acceptance	Projects	Links	Autonomy	
Gratefullness	.302**	.301**	.451**	.406**	.485**
Inspiration	.300**	.266**	.393**	.403**	.455**
Forgiveness	.267**	.303**	.388**	.346**	.434**
Courage	.243**	.275**	.360**	.301**	.394**
VP (Total)	.346**	.353**	.498**	.457**	.551**

** $p < .01$ bilateral.

Table 1. Correlation between the perceived variables of virtuosity and psychological well-being in adolescents

Once the correlation between the study variables was verified, cluster (type K media) was identified, which would account for a potential distribution of psychological well-being levels (Table 2). These conglomerates are considered as transversal variables to the gender of the participants (male, female) and the type of school organization (municipal, fiscal). This is how the following groups or conglomerates were defined: (i) Strengthened psychological well-being corresponds to 58% of cases of the sample with a greater presence of women than men; (ii) Psychological well-being under construction corresponds to 36%
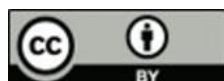
of cases of the sample with a greater presence of men than women; And, (iii) vulnerable psychological well-being corresponds to 6% of cases of the sample with a greater presence of men than women. In the three identified groups predominated the presence of girls and boys coming from taxes.

		Psychological well-being			Total
		Strengthened (n = 320)	In process (n = 200)	Vulnerable (n = 30)	
Gender	Male	42.5 %	63.3 %	62.0 %	279
	Female	57.5 %	36.7 %	38.0 %	271
Educative organization	Fiscal	78.2 %	70.0 %	69.0 %	392
	Municipal	27.2 %	30.0 %	31.0 %	158

Table 2. Clusters of psychological well-being in adolescents distributed by gender and type of educational organization (percentages)

Models with three, four and five groups were verified in which the level of psychological well-being was classified. Finally, a model formed by three groups was opted by being the one with best distributions of the descriptive measures presented (arithmetic mean and standard deviation). The aforementioned was confirmed with the ANOVA analysis (Table 3), which included the dimensions of psychological well-being as dependent variables (acceptance, projects, links and autonomy) and conglomerates linked to the level of psychological well-being in adolescents as a factor of belonging, defined at first (psychological well-being strengthened, in process and vulnerable).

	Psychological wellness			
Psychological well-being dimensions	Strenghtened (n = 320)	In process (n = 200)	Vulnerable (n = 30)	ANOVA
	Mean (DS)	Mean (DS)	Mean (DS)	F (2.549)
Acceptance	11.36 (.75)	10.06 (1.15)	7.17 (1.42)	326.349**
Projects	8.42 (.70)	7.63 (1.05)	6.17 (1.56)	113.701**
Links	8.41 (.64)	7.22 (1.15)	5.90 (1.45)	176.516**
Autonomy	8.03 (.79)	6.80 (.91)	5.00 (1.02)	258.529**
** $p < .001$				

Table 3. Unidirectional variance analysis (ANOVA) linked to the conglomerates that characterize the psychological well-being of adolescents

With the inputs obtained, it was advanced in the definition of profiles that link the positive school organizations with the conglomerates referred to the level of psychological well-being in adolescents previously defined (Table 4). In this perspective, one-way ANOVA analysis was developed, where the dependent variables were the dimension scores of the perceived virtuosity in school organizations, and the conglomerates are the relevance
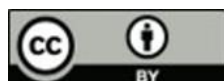
factors in which was grouped the psychological well-being in adolescents. Significant differences in the value of the means were evident at all crosses.

Psychological well-being dimensions	Psychological well-being			ANOVA
	Strenghtened (n = 320)	In process (n = 200)	Vulnerable (n = 30)	
	Mean (DE)	Mean (DE)	Mean (DE)	F (2, 547)
Gratefullness	35.72 (4.50)	31.89 (6.15)	26.73 (8.71)	57.49**
Inspiration	22.98 (3.36)	20.86 (3.61)	17.40 (5.46)	46.78**
Forgiveness	19.53 (3.30)	17.26 (3.39)	17.70 (4.78)	46.46**
Courage	14.63 (2.68)	13.30 (2.67)	11.33 (3.83)	29.08**

**$p < .001$

Table 4. Conglomerate of psychological well-being and their relationship with the perceived virtuosity in school organizations

With the support of the empirical information raised, three profiles were established which characterized the school organizations studied, these are defined as:

• Educative institutions perceived as virtuous with students who demonstrate strengthened levels of psychological well-being: in this profile the 58% of cases of the sample were located (57.5% women). They were positive school organizations that inspired with the example of their members the effort and dedication, promoted gratitude, recognition and forgiveness when they merited and established the scope of accomplishments from the effort, the decision and courage. The members proved to have life plans, showed autonomy in decision making, relationships between peers, and with adults it was based on empathy and assertive communication and acceptance of their own strengths and weaknesses.

• Educative institutions perceived as in process to the virtuosity with students who presented levels of psychological well-being in process: This group brought together 36% of cases present in the sample (36.7% women). This profile was characterized by teenagers who went through problems in the construction of their strengths and values, allowing their adaptation to new and changing situations in educational environments, whose norms and policies were still not-well known and required to be defined more clearly. Gratitude, forgiveness and sense of transcendence were occasionally evident in the school organization, and adolescents required support to set goals and objectives and translate them into life plans or projects, as well as to make decisions and direct their actions through positive achievements.

• Educative institutions perceived as unvirtuous with students who have levels of vulnerable psychological well-being: they converged in this profile 6% of cases of the sample (38% women). Adolescents in this profile presented difficulties in establishing short and medium-term goals and objectives, productive social interaction, and attitudes of care and self-care were weak in presenting risky behaviors. For this group, forgiveness, gratitude or spirituality were unincorporated values, no life projects were clearly defined and neither did they consider that the
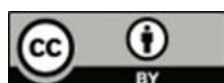
school organization inspired their practices and values of support, solidarity and compassion.

7. Conclusions

Although the study evidences a relationship between perceived virtuosity in school organizations and psychological well-being in adolescents registered at a moderate level, it is possible to affirm that organizations that practice gratitude, forgiveness, courage and inspiration are a direct influence on better levels of autonomy in adolescents, their ability to plan for the future, in accepting themselves and others and establishing positive and lasting links. In this way, all the dimensions of the perceived variable of virtuous organizations contribute in the effort to achieve better levels of psychological well-being (Eudaimonic). The aforementioned confirms the theoretical validity of the research carried out and the interaction between the study variables.

The research developed determines that female adolescents have better levels of psychological well-being than males; this is also related to higher levels of perceived virtuosity in the school organizations they attend. The above refers to a more sustained interest of girls compared to boys to project towards the future, and project their lives in the medium and long term to accept themselves as integral individuals, to seek and maintain positive and lasting relationships and to demonstrate more capacity to make decisions with autonomy. The aforementioned is enhanced in virtuous school spaces where they find inspiring models to follow, in environments that promote gratitude as a main value, in contexts in which mistakes are recognized and in challenging environments that drive the achievement of accomplishments.

It is necessary to emphasize that female adolescents value high school organizations where "the practice of values such as respect and solidarity are everyday events, in which inclusion and development opportunities are permanent, and which provide psycho-emotional support with trained teachers" (Unda-Villafuerte, 2018, p. 119). Thus, a line of future research should relate how school organizations, defined as virtuous, develop capacities in male and female adolescents to cope in a resilient and effective way to the psychosocial risks that they are exposed to, such as gender-based violence, bullying, pressure for alcohol and other drugs, suicide, human mobility situations, among others.

The profile identification of virtuous school organizations in relation to the levels of psychological well-being in adolescents constitutes an important contribution of this study. Working from gratitude, forgiveness, courage or inspiration as the dimensions of school virtuosity, as well as in autonomy, links, projects and acceptance, as dimensions of psychological well-being, give the adolescents the tools to face the psychological risks. In this way, three levels of school organizations are raised (virtuous educational establishments, in process to virtuosity and not virtuous) that interact in their order with three levels of psychological well-being in adolescents (strengthened psychological well-being, in the process and vulnerable). The types of school organizations and the levels of psychological well-being in adolescents should be reviewed, adjusted, restated and applied in the work with teachers, authorities, families and with the teenagers.

The perceived virtuosity becomes a marker of educational quality in school organizations determined by the ability to respond efficiently and in a timely way to the needs of cognitive, affective and social development of boys and girls and, therefore, to their personal and social valuation reflected in the dimensions and indicators that shape the psychological well-being. In order for the aforementioned to be possible, the dimensions of the virtuosity

perceived in school organizations must be concretized and institutionalized through the standards of school management and their dimensions defined by the Ministry of Education of Ecuador (2017, p. 9):

1. Administrative management: Institutional organization, professional development, information and communication, infrastructure, equipment and complementary services.
2. Pedagogical Management: Teaching-learning component, student counseling and pedagogical reinforcement.
3. Coexistence, school participation and cooperation: coexistence and school participation and strategic alliances for development cooperation.
4. School Safety: Risk management and protection.

In other words, the construction of positive school organizations perceived as virtuous and the development of acceptable levels of psychological well-being in adolescents must be linked to the quality standards established for the education of Ecuador. In school organizations, standards and indicators of educational quality are equivalent to the performance or performance indicators of workers' organizations. If a key assumption is that virtuous organizations improve institutional performance, further research should address how school organizations perceived as virtuous have an impact on improving educational quality standards previously established by the national educational authority.

The developed research realizes that higher levels of happiness and vital satisfaction in adolescents are linked to virtuous school environments that stimulate the development of personal and social strengths and values, and norms, policies, educational plans and programs that enhance psychological well-being. At the same time, better levels of psychological well-being in boys and girls allow to build virtuous school organizations. However, the above is not enough, social research determines that happiness, and well-being is linked to better living conditions reflected in the exercise of rights, gender equality, inclusion from diversity and the integral satisfaction of the basic needs. In this way, it is a question of generating a new school and a social cooperation around education in the framework of a global project for the construction of fair and equitable social and economic relations. The aforementioned involves linking the school with the community and the institutions that act in it from intersectoral and inter-institutional action.

It should be noted that a limitation of the study constitutes the use of instruments with self-reporting scales that can be manipulated in their filling. Another constraint has to do with the fact that it was a selected sample in a non-probabilistic way, which can generate representativeness biases. Additionally, it should be noted that the sample considers fiscal and municipal campuses, it is necessary to verify the results and conclusions in school organizations with private financing.

Finally, the developed study positions positive psychology as a theoretical alternative and disciplinary scientific framework for the understanding of the school as a positive organization and the action of the actors of the educational community (Students, families, decision makers) from their values, strengths and well-being. It also raises the challenge of generating programs, which built from positive psychology enable the integral development of the actors of the education processes and their institutions.

86

References

Barcelata, B. y Rivas, G. (2016). Bienestar psicológico y satisfacción vital en adolescentes mexicanos tempranos y medios. *Revista Costarricense de Psicología*. Julio – Diciembre, volumen 35, número 2, 119 – 137. ISNN 0257-1439.

Cameron, K. S. (2012). *Virtuousness and performance: a productive partnership*. Execitive white paper series. Michigan Ross Scholl of Business.

Cameron, K., Mora, C., Leutscher, T. y Calarco, M. (2011). Effects of Positive Practices on Organizational Efectiveness. *The Journal of Applied Behavioral Science* XX(X) 1– 3.

Castro-Solano, A. (2009). El bienestar psicológico: cuatro décadas de progreso. *Revista Interuniversitaria de Formación del Profesorado, 23* (3), 43-72.

Castro-Solano, A. (2010). *Fundamentos de Psicología Positiva*. Paido s: Buenos Aires.

Castro-Solano, A. (2011). Las rutas de acceso al bienestar. Relaciones entre bienestar hedónico y eudaemónico. Un estudio en población argentina. *Revista Iberoamericana de Diagnóstico y Evaluación. vol.* 1, nu m. 31, pp. 37-57.

Castro-Solano, A. (2012). La Psicología Positiva en América Latina. Desarrollos y perspectiva. PSIENCIA, Revista Latinoamericana de Ciencia Psicológica, 4 (2), 108 – 118.

Castro-Solano, A. y Casullo, M. M. (2001). Evaluación del bienestar psicológico en estudiantes adolescentes argentinos. *Revista de Psicología*. *Lima, Universidad Católica del Perú*, XVIII (2), 35 – 68.

Casullo, M. M. (2002). Evaluación del Bienestar Psicológico en Iberoamérica. Buenos Aires: Paidós.

Casullo, M. M., y Castro-Solano, A. (2000). El significado de bienestar en estudiantes adolescentes. *Revista Iberoamericana de Diagnóstico y Evaluación* – e Avaliação Psicológica, 12(2), 57-70.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. (2.ª Ed), Erlbaum, Hillsdale, NJ.

Diener, E., Suh, E.M., Lucas, R.E. & Smith, H.L. (1999). *Subjective well-being: Three decades of progress. Psychological Bulletin*, 125, 276-302.

Fondo de Naciones Unidas para la Infancia (UNICEF). (2011). *La adolescencia una época de oportunidades*. Fondo de las Naciones Unidas para la infancia. New York.

González, S. y Rivera, M. (2016). Efectos del apoyo psicosocial, resiliencia y competencia social en el bienestar psicológico de adolescentes de sectores vulnerables, con eventos de vida estresantes. En Gaxiola, J. & Palomar, J. (coordinadores). *El bienestar psicológico, una mirada desde Latinoamérica*, 31-60. Universidad de Sonora. Qartuppi. Primera edición. Hermosillo, México.

Güemes-Hidalgo, M., Ceñ al Gonza lez, M. e Hidalgo-Vicario, M. (2017). Pubertad y adolescencia. *Adolescere. Revista de Formación Continuada de la Sociedad Española de Medicina de la Adolescencia. Volumen* V. Enero-Febrero 2017. No 1.
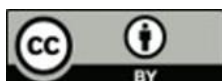
Jiménez, V. (2014). Psicología contemporánea básica y aplicada. *Psicología Positiva*. Ediciones Pirámide. Capítulo 21, 621-645.

Lupano-Perugini, M. L. (2017). Virtudes organizacionales, performance y satisfacción laboral. Diferencias según variables individuales y organizacionales en empleados argentinos. Psicodebate Vol. 17 No 1 ISSN: 1515–2251 e-ISSN: 2451-6600, 35–50 http://dx.doi.org/10.18682/pd.v17i1.637

Lupano-Perugini, M. L. y Castro-Solano, A. (2010). Psicología Positiva: análisis desde su surgimiento. *Cienc. Psicol.* [online]. *vol*.4, n.1, pp.43-56. ISSN 1688-4221.

Lupano-Perugini, M. L. y Castro-Solano, A. (2018). Influencia de las virtudes organizacionales sobre la performance laboral. Un estudio en organizaciones argentinas. *Centro Interamericano de Investigaciones Psicológicas y Ciencias Afines* (CIIPCA), volumen 35.

Ministerio de Educación del Ecuador (2017). Manual para la implementación y evaluación de los estándares de calidad educativa: gestión escolar, desempeño profesional directivo y desempeño profesional docente. Subsecretaría de Fundamentos Educativos. Dirección Nacional de Estándares Educativos. Quito, Ecuador. ISBN: 978-9942-22-234-3

Navarro-Pérez, J., Pérez-Cosín, J., y Perpiñán, S. (2015). El proceso de socialización de los adolescentes postmodernos: entre la inclusión y el riesgo. Recomendaciones para una ciudadanía sostenible. *Pedagogía Social. Revista Interuniversitaria,* (25), 143-170.

Nelson, D., y Cooper, C. (2007). *Positive organizational behavior: Accentuating the positive at work*. Thousand oaks, CA: Sage.

Organización Mundial de la Salud. (2006). Constitución de la Organización Mundial de la Salud. *Documentos básicos*, suplemento de la 45ª edición.

Palomera Martín, R. (2017). Psicología Positiva en la Escuela: Un Cambio con Raíces Profundas. *Papeles del Psicólogo*, 38 (1), 67-71. Recuperado de http://www.papelesdelpsicologo.es/pdf/2823.pdf

Páramo, M., Straniero, C., García, C., Torrecilla, N., y Escalante, E. (2012). Bienestar psicológico, estilos de personalidad y objetivos de vida en estudiantes universitarios. *Pensamiento Psicológico*, 10 (1).

Peterson, C. (2006). *A primer in positive psychology*. New York, NY: Oxford University Press. ISBN 9780195188332.

Ryff, C. (1989). Happiness is everything, or is it? Exploration son the meaning of psychological well- being. *Journal of Personality and Social Psychology*, 57 (6), 1069-1081.

Romero Carrasco, A. y Brustad, R. y García Mas, A. (2007). Bienestar psicológico y su uso en la psicología del ejercicio, la actividad física y el deporte. Revista Iberoamericana de Psicología del Ejercicio y el Deporte, 2 (2), 31-52.

Salanova, M., Llorens, S. (2016). Hacia una psicología positiva aplicada*. Papeles del Psicólogo. Psychologist Papers, Vol.* 37(3), pp. 161-164.

Salanova, M., Llorens, S. y Martínez, I. (2016). Aportaciones desde la Psicología Organizacional Positiva para desarrollar organizaciones saludables y resilientes. *Papeles del Psicólogo, vol*. 37 (39), pp. 137-184.

Seligman, M. E. P. (2003). Positive psychology. Fundamental assumptions. *American Psychologist*, 126-127.

Seligman, M. E. P., Steen, T. A., Park, N., Paterson, C. (2005). Positive psychology progress: Empirical validation of interventions. Fundamental assumptions. *American Psychologist*, 60 (5), 410-421.

Seligman, M. E. P. y Csikszentmihalyi, M. (2000). *Positive psychology: An introduction. American Psychologist*, 55, 5-14.

Unda Villafuerte, F. (2018). *Virtuosidad percibida en organizaciones escolares, bienestar psicológico en adolescentes y liderazgo auténtico en docentes*. Universidad de Palermo. Tesis doctoral. Repositiorio.

Authors

FERNANDO UNDA-VILLAFUERTE obtained his Ph.D. in Psychology (PhD) from Universidad of Palermo, Argentina in 2018. He reached the Master's degree in Intelligence and Education Development in 2011, the Diploma in Innovative Pedagogy in 2010 and the specialty in Intellectual Diagnostics in 2010 at Universidad Técnica Particular de Loja. In the year 2001 he received a PhD in Educational Psychology specialized in Adolescent Psychology from Universidad Central del Ecuador. In 1993 he obtained a bachelor's degree in Education Sciences specialized in Educational Psychology from Universidad Central del Ecuador.

He is currently a specialist in Education and Communication for the Health Promotion in the Ministry of Public Health of Ecuador. He is a hired professor at the Institute of Research and Postgraduate studies at the Faculty of Philosophy, Letters and Education Sciences of Universidad Central del Ecuador since 2013. He has been tenure professor of the School of Psychology at University de las Americas in 2014. In the international non-governmental organization CARE, he served as director for Ecuador between 2012 and 2017, as program manager between 2010 and 2012, also carried out coordination and advisory functions in education between 2002 and 2010. In the International Plan Ecuador, he was the manager of the program unit Quito between 2000 and 2002 and performed coordination functions in education for the Office Plan in the province of Bolívar between 1996 and 2000. He was the Pedagogical Coordinator of the Foundation "Hoy", and in "Diario Hoy" between 1992 and 1996. Among his research and study lines are positive school organizations, the authentic leadership in teachers and psychological well-being in adolescents approached from positive psychology; he also addresses the issues of integral development of adolescents and human mobility from the approaches of inclusion, gender and interculturality.

MARÍA LAURA LUPANO-PERUGINI has a PhD from Universidad de Palermo. She holds a bachelor's degree in Psychology and a Professor in the middle and upper level in Psychology from Universidad de Buenos Aires; she is a fellow and is currently an assistant researcher at the National Council for Scientific and Technical Research (CONICET) of the Republic of Argentina. She is a researcher at the Research Center of the Faculty of Social Sciences of the Universidad de Palermo.

Her research line is the study of positive organizations, well-being, values and performance from positive organizational psychology. She has participated in more than 30 scientific meetings and forums with papers referring to research and evaluation in psychology. Her scientific papers are found in the most important indexed journals of the region (Scopus, Latindex, REDALYC, Scielo).
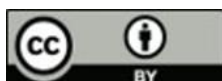
La propuesta metodológica como una alternativa para la integración de saberes

Methodological proposal as an alternative for the integration of knowledge

Floralba del Rocío Aguilar-Gordón

Universidad Politécnica Salesiana, Research group of Education Phylosophy (GIFE), Quito, Ecuador

faguilar@ups.edu.es

https://orcid.org/0000-0002-9886-6878

Resumen

El presente artículo se propone reflexionar acerca de la propuesta metodológica como una alternativa de titulación, como una estrategia para la resolución de problemas y como una manera de integrar saberes que permitan la formación integral de los seres humanos; en tal sentido, este documento explica detalladamente cada una de las etapas de su constitución y analiza las características, contribuciones y estructura de la misma. Este trabajo pretende establecer un conjunto de pautas para la estructuración de una propuesta metodológica crítica, creativa e innovadora que responda a necesidades emergentes de la realidad educativa y de la sociedad en general. La propuesta metodológica se convierte en una estrategia pedagógica y didáctica que potencia diferentes habilidades, destrezas y competencias en el ser humano; es un referente para la formación profesional que valora los procesos investigativos, la percepción analítica, crítica y reflexiva de los diversos hechos, fenómenos y situaciones educativas-contextuales en las que se encuentran inmersos los sujetos. En el trabajo cotidiano del pedagogo en el salón de clase predomina la incertidumbre acerca de los procesos que se debería seguir para que el estudiante aplique los conocimientos adquiridos, de allí que el contenido expuesto en este manuscrito puede ser una oportunidad, un ejercicio y una acción a ejecutarse para que el estudiante pueda llevar a la práctica el corpus teórico adquirido.
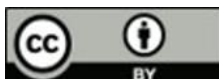
Palabras clave

Educación, formación integral, integrador, propuesta metodológica, saberes.

Abstract

This article reflects on the methodological proposal as an alternative of qualification, as a strategy for solving problems and as a way of integrating knowledge that enables the integral formation of human beings; in this sense, this document explains the stages of its constitution and analyses its characteristics, contributions and structure. This paper aims to establish a set of guidelines for the structuring of a critical, creative and innovative methodological proposal that responds to the emerging needs of the educational reality and of the society in general. The methodological proposal becomes a pedagogical and didactic strategy that enhances different skills and competences in the human being; it is a reference for professional training that values the research processes, the analytical, critical and reflective perception of the facts, phenomena and educational-contextual situations in which the subjects are immersed. In the daily work of the professor predominates the uncertainty about the processes that should be followed in order for the student to apply the acquired knowledge; hence the content in this manuscript can be an opportunity and an action to be carried out so that the student can practice the acquired theoretical corpus. The manuscript uses the phenomenological-hermeneutic method that allows a direct approach to the object of study and promotes the understanding of the individuals in their context.

Keywords

Education, integral teaching, integrative role, methodological proposal, knowledge.

1. Introduction

This article analyzes the methodological proposal as a qualification alternative and as a way of integrating knowledge that allow the integral formation of human beings. A methodological proposal is a particular type of academic manuscript whose main objective is to communicate the results.

Likewise, the methodological proposal constitutes one of the alternatives to achieve the qualification in specific degree, master and professionalization programs; these are titling works that have similar complexity to research and development projects; (a) complex compared studies; high-level scientific articles; the design of complex models; (a) artistic products; high-tech devices and others set out in the Academic Regulation (CES, 2017).

The scientific theories related to the methodological proposals express that these are characterized by the instrumentation of an interdisciplinary integration work system, in which a series of elements and learning strategies with systemic and processual focus are involved, oriented to the implementation of learning, skills, and competencies.

The methodological proposal aims to systematize a set of theoretical and practical knowledge that favors the scope of meaningful learning; spaces are fostered in which the development of cognitive, procedural and attitudinal competencies developed by the student throughout a given formative program is observed. Hence, from the ontological perspective, the methodological proposal intents the reconstruction of knowledge, capacity that is developed by the person; has the ability to renew the various ways of understanding and understanding the world, and the skills it deploys for critical-constructive-transformative innovation of the reality in which it lies.

The methodological proposal forces the subject to make an integration of the knowledge acquired with the new know-how; the mind of the concretizes actions in his/her daily life, the person restructures his/her internal world to modify the external world, the person practices the theoretical corpus assimilated. Among the permanent problems surrounding the structuring of a methodological proposal are: what is going to be investigated; how and the time it will be done; the cost and the resources that are going to be used. These questions will be answered in this paper, which aims to establish a set of guidelines for the structuring of an integrative, critical, creative and innovative methodological proposal. This work uses the phenomenological-hermeneutic method that allows a direct approach to the object of study and encourages the comprehension of the individuals in their context.

This document is structured into five parts: the first deals with the characterization of the methodological proposal; the second reflects on the contributions made by this type of work for the strengthening and fulfilment of the bases of education; the third sets out some preliminary questions concerning the methodological proposal; the fourth analyzes the stages of the methodological proposal process and finally, the fifth explains the structure of the methodological proposal. The development of each topic is then presented.

2. Characterization of the methodological proposal

These are some of the characteristics of the methodological proposal:

2.1 The integrative role

The integrative nature of the methodological proposal makes real the integral formation of the human being who is convinced that learning and knowledge is forged throughout life. As society becomes more complex, "it is a priority to reassess integrative, qualitative and holistic approaches that tend to consider that knowledge is not produced in a linear way, thus, being necessary to rethink the meaning, nature, construction and the very meaning of knowledge" (Aguilar-Gordón, 2010, p. 149). The new era requires collaborative and integrative ways of thinking that overcome the reductionisms and fragmentation of knowledge, it also requires new ways of interaction from the emergence and use of digital technologies. Furthermore, the integrative nature of the methodological proposal maximizes the fact that education is:

> A reality that belongs to the temporal space of all people; it is action-creation, construction and transformation of life into society. Education is an active and psycho-physical-social order that allows the comprehension of new realities according to the level of internal maturation of the subjects (Aguilar-Gordón, 2019a, p. 3).

2.2 Interdisciplinary role

The methodological proposal is interdisciplinary because it articulates, dialogues, relates and requires the implementation of essential aspects of the different knowledge, scientific or cultural disciplines that conceives the presence of philosophical, epistemological, sociological and pedagogical knowledge in the different curricula "as rigorous interdisciplinary fields, with its own historicity and as knowledge that propitiates responses to the human problematic of the last times" (Aguilar-Gordón, 2019a, pág. 26).

2.3 Contextual role

The methodological proposal considers the characteristics of the different educational environments and its technological reality. It arises from a diagnosis and responds to a

specific educational and social context in which the set of actions aimed at fulfilling the proposed objectives will be developed. The contextual nature of the methodological proposal encourages "meaningful learning based on experience, useful for life,... with the incorporation of new models and educational strategies..." (Aguilar-Gordón, 2019a, p. 10) that promote the need to understand and respond to the theoretical and praxiological requirements of the environment.

2.4   Motivational role
This type of work contributes so that the subject becomes aware of the unlimited role of the knowledge aspect that impels to activate it by means of the search of different modalities of studies, in real contexts and in virtual learning environments.

2.5   Systematic role
The methodological proposal complies with systematic processes that seek to link and give meaning to the programmatic contents previously addressed in various modules, courses, and the student's actions in the educational and social context in which it is immersed.

2.6   Innovating role
The methodological and technological proposal is characterized by being innovative. In the pedagogical field, innovation can be at the generation level of new educational, pedagogical and didactic models; the proposal of new methodologies, techniques and teaching-learning strategies; the construction of new evaluation tools and instruments. Innovation can be, for example, "in the use of unconventional strategies, ... in the field in which valuable results can be obtained" (Marchetto, 2006, p. 63) for all involved, for the teacher in his/her role as researcher, for the student in obtaining the learning through creative, experiential and meaningful ways and for the context.

Innovation in the technological field of education should include the four phases suggested by Lara (1998): "research, technological development, implementation and adoption, and improvement" (p. 43), since the research proposals contains two essential stages of basic and applied research. In reference to the first, the proposal is oriented to the generation of scientific knowledge, its centers of action are the organizations, the educational institutions and the socio-educational context. In relation to the second, the proposal is directed towards the search of original alternatives that contribute to the improvement of the situation.

2.7   Questioning and operative role
These propose to diagnose problems and seek for alternative solutions to satisfy the different educational needs of the individuals and the contexts.

2.8   Organizational role
Every methodological proposal is developed on the basis of plans, programs, projects and processes organized in a timely, coherent and systematic way. Planning becomes the base of all methodological and technological proposals. Adequate planning allows to optimize resources, meet objectives, meet essential individual needs and social, academic and pedagogical expectations.

2.9 Formative role
The methodological and technological proposals allow to achieve the main objective of education: "to learn how to learn" and with its four fundamental bases: to learn to know, to learn to make, to learn to live together, to learn to be, raised by Delors (1996) in the report

to UNESCO. In this sense, education should "promote the development of meta-cognitive activities useful for understanding life and the world; an education that allows to present what we feel and what we think; an education where the student speaks more and hears less" (Aguilar-Gordón, 2010, p. 36).

3. Contributions of the methodological proposal for the fulfilment of the education bases

- **Learning to be.** The methodological and technological proposals promote the direct or mediated interaction of technology with different individuals, personalities, contexts and realities that carries with it the development of high levels of comprehension, tolerance, adaptation to the circumstances and the development of a high capacity for autonomy, responsibility and respect for the diversity, considering different learning styles, thinking styles, memory classes, physical capacities, communication skills, types of intelligence, forms of reasoning, etc.
- **Learning to know**. The methodological proposal combines the scientific corpus acquired with the range of knowledge that emerges from the researched social educational environment. The articulation of the student's own general culture, the systematization of the theory acquired in the formative process and his/her own experiences allow the comprehension of the problem, the deepening of the theory that supports the proposal and the generation of solutions. This type of work allows to know more to take advantage of all the possibilities offered by the researched phenomenon, the subjects and the contexts involved.
- **Learning how to do.** The methodological proposal carries with it new challenges for the teacher, since he/she not only performs an academic work to achieve a professional qualification but goes beyond, evidences the implementation of all that he/she knows, discovers and projects to respond to the diversity of situations, experiences and educational and social problems that he/she is responsible of facing.
- **Learning to live together.** The methodological proposals promote the capacity development for the interaction, cooperation, teamwork, collaboration and sustained dialogue with others to find the right solutions to solve conflicts and/or to solve different educational problems.

4. Preliminary issues of the methodological proposal

With the aim of fostering the interest in science and its articulation with educational praxis and with the different situations of human activity, the methodological proposal inquires about what, how, when and the reason of studying theories and concepts; it establishes a clear rupture with memorization and simple association to orientate itself to the comprehension of new problems, contexts and subjects. Hence, the main preliminary issues of the methodological proposal are:

1. **Identification of the main needs of the context.** It becomes the initial phase of the methodological proposals, it revises the background, the difficulties, it describes the problematic nuclei present in a given reality.
2. **Problems that will be solved.** It is the basis of any proposal, it describes and explains the interest in the current changes and transformations that are to be achieved.

3. **Brainstorming for problem solving.** Generation and systematization of ideas for the structuring of a possible solution, leaving open the way for the work of application and experimentation.
4. **Methods and techniques for the application and/or experimentation**. The establishment of methods, techniques, procedures and instruments that allow the implementation and experimentation of the theory and the concepts involved in the problematic situation.
5. **Conceptualization and Theoretical foundation of the alternative solution.** Each result demands deepening in the comprehension of the contents, a solid theoretical support and its potential application.
6. **Communication and socialization mechanisms.** It is necessary to work on the various representations and results of the exploration carried out, the idea is to look for diverse mechanisms like reports, exhibitions, applications, etc. that allow the communication and socialization of the proposal.
7. **Revision of the construction process.** Review, observation and correction processes are used as well as rubrics, worksheets, guides that allow a rereading and/or reworking of the proposal carried out.
8. **Generation of guidelines for the transfer to other scenarios**. Guidelines are proposed to apply and solve problems in other contexts, new ideas, questions and questioning are set up aimed at analyzing other realities.

5. Phases of the methodological proposal process

The research activity of a methodological and technological proposal is structured according to three major stages:

1. **Research planning.** This stage is formed by the following steps: The evaluation of current conditions and the definition of the problem; the consultation of information sources; the formulation of goals and objectives; the formulation of hypothesis, proposition or idea to defend; identification of variables or main guidelines; structuring the plan of action or the design of the research that will guide the proposal; the allocation of economic, material, human and financial resources to be used; the mechanism implementation of the proposal; and finally, the mechanisms and strategies for monitoring and controlling the proposal.
2. **Conducting the investigation.** This stage presupposes the following steps: Identification of the context, the subjects, the population and the sample to be used, as well as the identification, organization and systematization of the data to be used.
3. **Obtaining and communicating the conclusions.** The shortest and most important part of the research work includes two successive works: a) the elaboration of the conclusions reached after having analyzed and interpreted the data obtained in the investigative process; and b) the structuring of the research report which serves as a means of communicating the results, the difficulties encountered, the limitations of the research, the projections, as well as the implications in the educational practice.
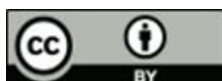
6. Structure of the methodological proposal

The methodological proposal is formed by the following elements:

6.1 Definition of the topic

The topic of the methodological proposal is characterized by being brief, interesting, clear, precise and attractive to cause the interest of the reader. The subject should be raised concisely, should be informative, may not exceed a maximum of 85 characters including the space. The topic arises from ideas; problematic situations; an individual or social need; the theoretical or practical experiences lived by the experts or by the investigator himself; observation of contexts and subjects; the researcher's previous knowledge; the investigations carried out; the sources investigated; etc.

6.2 Abstract

The abstract of a methodological proposal will have an extension from 220 words to 250 words at the most. The abstract is characterized by a clear and concise description of the following elements: brief presentation of the topic; objectives and the problem; description of the problematic context and the methodology used; brief presentation of the main results and conclusions. It must be written in an impersonal way, "this work analyzes..." (Aguilar-Gordón, 2019b, p. 359).

6.3 Problem

The structuring process of an advanced methodological and technological proposal is initiated according to a problematic area from which the research problem is extracted; it comes from a theoretical or practical context. According to Carrasco and Tinker (2009), this phase can be synthesized in the question "What is it?" (p. 30).

The choice of the problem requires clarity and precision at the time of its formulation, to choose a suitable problem, Pérez Juste et al. (1981) say that a problem may arise as:

> a) a result of observation; b) a result of contact with professors or experts; c) as a consequence of publication readings, studying how the techniques and ideas examined could be applied to problem-solving; d) conclusion of lectures or discussions among specialists; review of "discussions" or "suggestions" for future research that any research report should have (p. 96).

Thus, a well-formulated research problem must meet the following conditions: a) real (not built or invented by the subject's mind); b) realizable, i.e., according to Carrasco and Caldero (2009) "it refers to a hypothesis that can be formulated as a solution attempt and that it is possible to verify " (p. 31) or that a proposition or idea can be raised to defend as a solution and provable attempt and, c) original, to such an extent that it is not resolved or that the resolution has been biased.

The problem needs to be formulated precisely in one or more specific questions in order to make it a suitable guide for the formulation of the hypothesis, the proposition or idea to be defended.

6.4 Objetives

The objectives of a methodological and technological proposal are a set of fundamental tasks fulfilled in the construction of all kind of scientific knowledge. The objectives are the
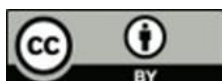
specific aims, purposes or goals that are intended to be achieved "in order to answer a research question that guide the development of research" (Briones, 2013, p. 8).

The methodological proposal should raise a general objective and specific objectives according to the nature of the investigative work. The general objective must respond to the whole or totality of the study or proposal that is intended to be carried out, must summarize the final result that is intended to be achieved with the development of the proposal. The specific objectives correspond to singular, particular or specific aspects of the proposal and derive from the general objective (Varios autores, 2019).

The objectives should be structured according to the main questions that constitute them: what? how? and what for? The objectives must be written using infinitive verbs, they must fulfil the main characteristics of clarity and precision. Any objective of an investigation must be measurable, pertinent, relevant, challenging, well-focused and feasible to be achieved or performed. It should be mentioned that the objectives should respond to the issue and the problem of research.

6.5   Justification

This section is constituted by the following components: a) brief presentation of the topic in order to attract the attention of the reader; b) the formulation of the purpose or objective of the methodological and technological proposal; c) the explanation and contextualization of the problem guiding the investigative work; d) the formulation of the problem; e) the presentation of the idea to be defended, the proposition or the hypothesis; f) The explanation of the importance, topicality and relevance of the methodological and technological proposal to be developed; g) the explanation of the main guidelines of the methodological framework used; h) the description of the main conceptual framework supporting the proposal; and finally, i) a brief description of the structure of the proposal. In the justification it is necessary to use bibliographic citations, as well as the most significant and current literature of the topic at national and international level (Aguilar-Gordón, 2019b).

6.6   State of the art

This phase of the process makes a systematic review of the "state of the question" on the subject of the investigation (Carrasco and Caldero, 2009, p. 31), it is the moment in which the researcher consults and reviews sources of information, seeks, collects and organizes the documentation on the subject matter of the investigation.

The state of the art is based on the analysis of the main publications on a given subject; its objective is to define the current state of the problem and evaluate the research carried out. According to Carrasco and Caldero (2009), the documentary review allows "to check whether the subject to be investigated is meaningful; it allows to redefine the problem or to clarify it, to situate the investigation within a perspective, theoretical body or conceptual framework" (p. 99).

Its structure responds to the phases of the topic/problem, contributions of researchers or teams, changes in the theory or the main theoretical currents; unsolved problems; current and future trends (Giordanino, 2011). It is a thorough and informed review of the subject/problem of research. According to Delors (1996) in the report to UNESCO, it is what a "summary study".
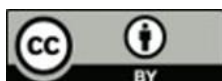
6.7   Theoretical perspective

It refers to the body or development of the proposal, it implies putting into practice, a critical, constructive and action attitude throughout the exhibition that must tend towards the interpeal, in order to get the attention of the subject and the problem. The investigator will have to generate in the reader the capacity to identify the dialogic intention of the proposal and to propitiate an open discussion.

This stage of the proposal is formed by the dialogue of the investigator with the theories, postulates, approaches, tendencies, authors and currents of thought that support the affirmations made according to the subject and the problem to solve.

This stage is formed by the set of topics and sub-themes that are intended to be developed; it is an explanatory, interpretative and active stage, in which the researcher also generates new theories, approaches and perspectives.

6.8   Methodological considerations

It refers to the establishment of the methods, techniques, instruments, procedures and resources required for the development of the proposal. The methodology is defined by the subject and the problem of the investigation. In the development of a proposal one can opt for methodologies of qualitative character, quantitative character or combined methodologies.

The function of the methodology of a proposal is to ensure the scientific rigor of the results, thus, it is necessary to bear in mind the following four basic criteria established by Lincoln and Guba (1985) quoted by Carrasco and Caldero (2009) and that paraphrased:

a) Reliability (it is presented when the data collected responds or identifies with the reality; in quantitative research it refers to the internal validity, and the qualitative methodology corresponds to the credibility);
b) The applicability (possibility of applying the discoveries or results obtained to other contexts or similar situations; in quantitative research it is called external validity and in qualitative methodology it becomes transferability);
c) Consistency (it indicates the degree to which the results will be obtained and whether the research is replicated or repeated; in quantitative research it is known as reliability and in qualitative research is called dependence);
d) Neutrality (meaning the certainty that data is not biased, in quantitative research is equivalent to what it is called objectivity and in qualitative research is identified as confirmation).

6.8.1   Methods

They are a set of systematically organized procedures that lead to the achievement of the objectives proposed in the research. Among the methods that may be useful are scientific logical methods: inductive, deductive and combined according to the topic and problem of the research.

If the proposal is aimed at solving a specific problem, with particular contexts and subjects, it generally uses the scientific method oriented by the following stages: observation of a specific problematic, phenomenon or reality; formulation of hypothesis, proposition or idea to defend; experimentation analysis, comparison, generation of new theory, conclusion or formulation of a new law.

On the contrary, if the proposal goes to the solution of a theoretical need identified at the content level of the scientific corpus it will use the deduction as a starting point to demonstrate its validity in the concrete practice, for this reason the following process is proposed: the theoretical framework understood as the corpus of ideas or theories that the investigator takes as a guide of his/her work; the approach of the problem (theoretical or practical) for which it will seek an answer; the formulation of a hypothesis, proposition or idea to defend; the deduction of the observed consequences; corroboration or refutation of hypotheses through the use of reasoning (deductive) with a view to annihilating and replacing a theory; paraphrasing Finol and Nava (1993) the subsequent consequences determined by the results obtained by the social and cultural impact of the new discovery.

It is important to consider that the proposal can be supplemented by philosophical methods such as phenomenological; hermeneutic; case studies; ethnographic; etc.

6.8.1.1 Phenomenological method

Carrasco and Calderero (2009) argue that the phenomenological method "is the systematic investigation of subjectivity" (p. 108). In addition, Bullington and Karlson (1984) affirm "its goal is the study of the world as presented in and through consciousness" (p. 51).

Patton (1999) quoted by Carrasco and Calderero (2009) states that the phenomenological method focuses on "how people understand the meanings of what happens" (p. 108) to the extent that researchers study different qualitatively forms to which subjects experience or think about various phenomena. The phenomenological method is aided by the hermeneutic or interpretation method whose purpose is to discover the understanding forms that people have on the specific phenomena to frame them within conceptual categories; in this sense, they carry out classifications on the conceptions that the subjects have about the world and of the reality with a view to that the obtained results can be general and can be applied to diverse situations and contexts.

This phenomenological-hermeneutical methodology is appropriate for investigating a multitude of educational issues, for example: interpretations done by students about how teachers manage themselves in the classroom; student perceptions of teaching methods; etc.

6.8.1.2 Study-case method

This method implies the analysis of a real situation in which there are needs and problems that require timely answers and solutions; it consists of a detailed description and analysis of specific social units or educational entities. Carrasco and Calderero (2009) say that this method "is situated within the ideographic approach, since it seeks the deep understanding of the individual, family, group, social institution, community reality, etc." (p. 110).

This type of method is appropriate for the study of a specific situation in a short time, it can be done in teams of work within a framework of discussion and debate, in which the exchange of ideas allows the adequate understanding of the problem or phenomenon researched, it enriches the proposal and shows interesting results.

6.8.1.3 Etnographic method

This method intends to discover beliefs, values, interactions, behaviors, perspectives, motivations of the people or of a social-educational group, and the way in which all this is developed over the time; what is important for this method is the meaning and the interpretations. The educational ethnography "studies the different areas of the social life of the school" (Carrasco and Calderero, 2009, p. 112); therefore, it describes, explains and

interprets the educational phenomena that takes place in the context of the educational institution. Following the study of Goetz, J. and LeCompte, M. (1988), there are four phases that make up the ethnographic research process:

> a) Questions related to the research and preliminary theoretical frameworks. b) Investigator's access to the stage, selection of key informants, initiation of interviews and selection of information retrieval and registration strategies. c) Information collection d) Analysis and interpretation of information (p. 172).

The research always begins with a global idea or thematic of the work in order to try to understand a system with the meanings of the participants. Ethnography is an effective means of critical and reflective analysis of teaching actions and practices.

Likewise, Wilcox (1993) argues that the applications of ethnography in education are summarized in two main lines: "a) exploration of the school as an instrument of cultural transmission in the classroom, communicating a complex set of attitudes, norms of behavior values and expectations.... and, b) exploring cultural conflict in the classroom" (p. 103). The first case includes research on the hidden curriculum or in the classroom as a socialization agent; in the second case, research on the confrontation between institutional culture and family organization and its impact on learning, learning styles, ways of thinking, interaction rules, etc. can be considered.

6.8.2 Techniques

In general terms, the techniques are understood as methodological and systematic procedures in charge of operating and implementing the research methods and that allow the effective and immediate compilation of the information. There are several usefulness techniques for the development of a proposal and these are employed according to the subject, the problem investigated, the context, the circumstance, the time and even according to the capacity of the investigator; among them are: the bibliographic or documentary technique; the observation; the interview; the survey; the signing; sampling; the test; the focal group. All of them contribute to the collection of the necessary information in an investigation.

6.8.3 Instruments

The research instruments are the tools employed by the investigator for the compilation of the information according to the subject, the problem and the objective of the investigation.

Hernández (1991) argues that "the appropriate measuring instrument is the one that records the observable data, so that it truly represents the variables that the investigator has as its object" (p. 123), in addition, this author states that despite existing different types of research instruments, "there is a general procedure that can be adapted to each of the types of instruments" (Hernández, 1991, p. 124); this procedure for building research instruments consists of the following steps: "to list the variables to be measured; to revise the conceptual definition of the variables and understand their meaning; to review how variables have been operationally defined; to choose the instrument and adapt it to the context of the research" (Hernández, 1991, p. 125).

In general, the instruments used are designed according to the selected technique, as each technique involves the use of its own instrument as explained in Table 1.

| Investigation Technique	Instrument
Observation	Observation guide
	Checklist
Signing	Cards
Survey	Questionnaire
Interview	Interview guide
Specific group	Discussion
	Discussion guide

Table 1. Research instrument techniques

6.8.4 Procedures

It consists in the description of the steps, tactics, strategies and actions to be proposed to carry out the research that will consolidate the methodological and technological proposal. These procedures may include:

1. Identification of the subject or problem of the proposal;
2. Relevant documentary review related to the subject, problem and issues raised in order to know the state of the art;
3. Actions related to the plan implementation or the proposal design (selection of the place or scenario where the proposal will be developed; actions related to site access, receptivity, feasibility, characteristics, predisposition of participants; method selection; the duration of the study, the contingencies, the resources to which it is used for the development of the investigation;
4. Activities related to the beginning of the study (to know the context, the norms, the selection of participants or the sampling for the development of the proposal);
5. Tasks on the collection and analysis of the data (the selection of techniques, instruments and procedures; the analysis of the information, the rigor assurance of the investigative work);
6. Actions and strategies in relation to the completion of the study;
7. The tasks on the basis of the elaboration of the research report and the drafting of the proposal.

6.8.5 Resources

These constitute the inputs required to carry out a methodological and technological proposal, these are different classes: human, material, economic, financial, technical and technological. All of them are essential assets and act as a system that allows the execution of a program, plan of action, project or proposal. The existence of all the research resources mentioned above makes possible the fulfillment of the objectives established, entails and integrates the scientific activity and contributes to the solution of the investigation problem. There is a clear connection between research resources and scientific method, because despite being different realities these are complementary and are required mutually for the resolution of a problem, for obtaining and for the processing, organization and systematization of information, and for the whole investigative process. It is only feasible to obtain information of the system investigated thanks to the existence of the resources, mainly those referred to the human talent.
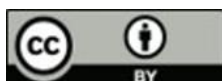
7. Results

The results expose objectively the main findings; it offers a vision of the implications of the work, the limitations, the tentative response to the problem, the relations with the objective of the investigation and the possible lines of continuity (Aguilar-Gordón, 2019b). The results must be real depending on the data obtained, analyzed, processed and systematized in the investigation.

8. Conclusions

Conclusions emerge from the investigative work and are associated with the whole process; these can be linked with recommendations, evaluations, applications, suggestions, new relationships and accepted or rejected assumptions, the material and methods used.

8.1 Conditions of the conclusions

- Must be properly justified
- Must respond to the objectives and the problem of research
- Must include deductions, inferences and new lines for future research
- Must be written in a clear and precise manner
- Must not make judgments of value
- Must not repeat or duplicate data
- Must not add new information
- Must appear in a logical and coherent sequence at the end of the text.

9. Timeline

It is the planning and temporal organization of the phases, activities and tasks programmed for the development of the proposal, using the Gantt chart created by Henry Laurence Gantt. Gantt´s chart is "a visual tool for planning and scheduling activities or tasks on a timeline" (Riviere and Riviere, 2017, p. 8). This tool allows the user to graphically establish the duration, the beginning of each of the activities and the monitoring and control of the entire planning. The schedule synchronizes time and actions for the fulfillment of the programmed information in the investigation; it reflects difficulties and successes of the investigative process.

10. References

"It is the set of works used in the structuring" (Aguilar-Gordón, 2019b, p. 360) of the methodological proposal. The bibliography must be presented in alphabetical order considering the first surname of the author and in the format suggested in the international APA norms in their sixth edition. The works and authors used in the research should be included and "their number should be sufficient to contextualize the theoretical framework with updated and important criteria" (Aguilar-Gordon, 2019b, pp. 358-359).

11. Conclusions

The methodological proposal is one of the mechanisms to achieve a true integration of knowledge, it contributes to the integral formation of human beings; it is an option to obtain a degree and postgraduate degree.
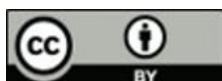
It harmonizes theory with practice; it is of a humanist-scientific-constructivist nature, it tends to social transformation. This work proposes a set of guidelines for the structuring of a critical, creative and innovative methodological proposal.

It is proposed to respond to the reality of the context, to the specific needs of a given community and to complex subjects in a complex society. The methodological proposal becomes a unit in which content, conceptualizations, arguments, concrete experiences, research and real practice coexist, it is oriented towards the solution of problems, to the transformation and to the human improvement.

The methodological proposal is clear and precise; it answers the essential questions: What? Where? How? When? It describes scenarios, problems, and establishes alternative solutions.
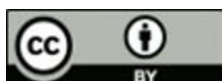
References

Aguilar-Gordón, F. (2010). Percepción y meta-cognición en la educación: una mirada desde América Latina, en Revista Sophia: Colección de Filosofía de la Educación, N. 8, pp. 147-195, DOI: https://doi.org/10.17163/soph.n8.2010.06, Quito-Ecuador, recuperado de: https://sophia.ups.edu.ec/index.php/sophia/article/view/8.2010.06

Aguilar-Gordón, F. (2019a). Fundamento, evolución, nodos críticos y desafíos de la educación ecuatoriana actual, en Revista Actualidades Investigativas en Educación, Volumen 19, Número 1, pp. 1-31, DOI: 10.15517/aie.v19i1.35715, Costa Rica, recuperado de: https://revistas.ucr.ac.cr/index.php/aie/article/view/35715

Aguilar-Gordón, F. (2019b). Normas Editoriales, en Sophia: Colección de Filosofía de la Educación, N. 26. Universidad Politécnica Salesiana, Abya-Yala, Quito, recuperado de: file:///C:/Users/Floralba/Downloads/157-116-PB.pdf

Bullington, J. y Karlson, G. (1984). Introducción al método fenomenológico de la investigación, en Revista Escandinava de Psicología, N. 25, pp. 51-63

Briones, G. (2013). Metodología y técnicas de Investigación para las Ciencias Sociales. Trillas. Cuarta reimpresión. México D.F. México.

Consejo de Educación Superior (CES) (2017). Reglamento de Régimen Académico, en Gaceta oficial, recuperado de: http://webcache.googleusercontent.com/search?q=cache:heo2TY_phLEJ:www.ces.gob.ec/doc/Reglamentos/2017/Abril/reglamento%2520de%2520regimen%2520academico%2520codificacion.pdf+&cd=1&hl=es&ct=clnk&gl=ec&client=firefox-b-d

Delors, J. (1996) La educación encierra un tesoro. Informe a la UNESCO de la Comisión Internacional sobre la Educación para el Siglo XXI. Santillana, Ediciones UNESCO, Madrid-España, recuperado de: www.unesco.org/education/pdf/DELORS_S.PDF

Finol, T. y Nava, H. (1993). Procesos y productos en la Investigación Documental. Ediluz. Universidad del Zulia. Maracaibo.

Hernández, R. (1991). Metodología de la Investigación. Mc – Graw- Hill. México D.F. México.

Carrasco, J. y Calderero, J. (2009). Aprendo a Investigar en Educación. Ediciones RIALP, S.A., Madrid.

Goetz, J. y LeCompte, M. (1988). Etnografía y diseño cualitativo en investigación educativa. Madrid: Morata.

Giordanino, E. (2011). Las revistas científicas: estructura y normalización. Pautas y evaluación, en Acuerdo de Bibliotecas Universitarias de Córdoba (ABUC), Córdoba, recuperado de: https://www.aacademica.org/egiordanino/29.pdf

Lara, R. (1998). Tecnología: Conceptos, problema y perspectivas. Madrid, España: Editorial Siglo XXXI.

Marchetto, M. (2006). Modelo teórico interpretativo del proceso de investigación desde un enfoque innovador en el IUETAEB. Tesis doctoral. Caracas, Venezuela: USM.

Pérez Juste, R. y otros (1981). Psicología Experimental I. Vol. I, Madrid: UNED.

Reviere, C. y Reviere, O. (2017). ¿Qué es un Diagrama de Gantt? Ed. Calleja, Madrid-España

Torres, J. (2015). ¿Qué es la propuesta metodológica IDEA?, en Iberoamérica Divulga. IBERCIENCIA. Comunidad de Educadores para la Cultura Científica. Universidad Autónoma Chapingo, Texcoco. México, recuperado de: https://www.oei.es/historico/divulgacioncientifica/

Varios Autores (2019). Significado. Diccionario online, recuperado de https://www.significados.com/objetivo-de-investigacion/

Wilcox, K. (1993). La etnografía como una metodología y sus aplicaciones al estudio de la escuela, en Lecturas de Antropología para educadores. Madrid: Trotta.

Author

FLORALBA AGUILAR-GORDÓN obtained her PhD degree in Philosophy from Pontificia Universidad Católica del Ecuador, in 1996. She obtained her master's degree in Education of Higher Education by Universidad Tecnológica América, in 2008. She obtained her master's degree in Applied Technology in Education from University de Alicante, the Autonomous Universidad Autónoma in Barcelona and Universidad Carlos III in Madrid, in 2010. She has a master degree in distance education from Universidad Técnica Particular de Loja, in 2010. She has a Diploma in Analytical Knowledge from Universidad Internacional de la Rioja, Spain, in 2016. She obtained a degree as specialist in Curricular Planning and Organization of Distance Education Systems by Universidad Técnica Particular de Loja. She obtained a Diploma in Curriculum and Didactics from Universidad Tecnológica América. She obtained a Diploma in Educational Transformation from Universidad Multiversidad Edgar Morin of México in 2009. She obtained a Diploma in e-learning by el Instituto Tecnológico of Madrid, in 2016. She obtained a higher degree in educational research from Universidad Tecnológica América. She obtained her higher degree in fundamentals of distance education and research by the Universidad Técnica Particular de Loja. She obtained her higher degree in cooperative learning from the Catholic University of Brasilia, in 2002. She has an international tutor certification accredited by the Catholic University of Brasilia in 2004. She obtained a higher degree in technology, management and leadership from the Universidad Tecnológica América. She obtained a degree in philosophy from the Faculty of Human Sciences of Pontificia Universidad Católica del Ecuador, in 1991. She obtained a degree in social, political and economic sciences from the School of Law of Universidad Técnica Particular de Loja, in 2007. She was awarded the title of lawyer for the School of Law of Universidad Técnica Particular de Loja, in 2013.

She is currently a tenured professor at Universidad Politécnica Salesiana. She is editor-in - chief of the journal Sophia: Collection of Philosophy of the Education, edited by Universidad Politécnica Salesiana of Ecuador indexed in more than 60 indexes and databases internationally recognized. She is the coordinator of the research group in Philosophy of Education (GIFE). Member of the Scientific Board and international reviewer of important journals of Ecuador, Spain, Colombia, Uruguay, Chile, Mexico and Costa Rica.

Enfoques innovadores de educación ambiental con el aprovechamiento de residuos orgánicos urbanos

Innovative approaches of the environmental education with the use of urban organic residues

Alisson Yépez-Chávez

Universidad UTE, Quito, Ecuador

ycav104074@ute.edu.ec

https://orcid.org/0000-0003-1541-943x

Fausto Viteri-Moya

Universidad UTE, Quito, Ecuador

faustor.viteri@ute.edu.ec

https://orcid.org/0000-0002-1458-8920

Suggested citation: Yépez-Chávez A. and Viteri-Moya F. (2019). Innovative approaches of the environmental education with the use of urban organic residues. *Revista Cátedra,* 2(*2*), 107-127.

Resumen

El presente documento nace de la necesidad de fortalecer la educación ambiental en el ámbito educativo a través del aprovechamiento de residuos orgánicos, que son vistos como desechos y generadores de problemas ambientales, económicos y sociales. Se determina la importancia de la educación ambiental como herramienta esencial para concientizar y sensibilizar, sobre todo para lograr el empoderamiento de los estudiantes y fomentar una cultura ecológica. El presente artículo tiene como propósito analizar las oportunidades de educación ambiental enfocadas en el aprovechamiento de residuos orgánicos generados a nivel urbano. Evaluar la educación ambiental formal en diferentes grupos objetivo y la relación de su aprendizaje con las TIC (Tecnologías de Información y Comunicación) y redes sociales. Su principal aporte es una presentación de la realidad de la educación ambiental
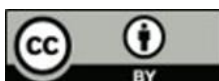
en el país y en diferentes contextos culturales. La metodología utilizada en el estudio se apoya en la investigación bibliográfica, de tipo expositiva; en donde además se recopila información sobre las falencias y proyectos educativos en el Ecuador en temas ambientales.

Palabras clave

Ambiente, aprovechamiento, educación, residuos orgánicos, TIC.

Abstract

This document arises from the need to strengthen environmental education in the educational field through the use of organic waste, seen as waste and generators of environmental, economic and social problems. The importance of environmental education is an essential tool to raise awareness and sensitize, especially to achieve the empowerment of students and promote an ecological culture. The purpose of this article is to analyze the opportunities for environmental education focused on the use of organic waste generated at the urban level. Evaluate formal environmental education in different target groups and the relationship of their learning with ICT (Information and Communication Technologies) and social networks. Its main contribution is a presentation of the reality of environmental education in the country and in different cultural contexts. The methodology used in the study is based on bibliographical research, of an expository nature; in addition, information is collected on the shortcomings and educational projects in Ecuador on environmental issues.

Keywords

Environment, use, education, organic waste, ICT

1. Introduction

The generation of waste is one of the most important problems in the society, since it is related to its growth and its activities. Waste is directly proportional to an increase in the economic level of a country. The culture of the waste lies in the environment and is presented through the following figures obtained from the INEC (National Institute of Statistics and Censuses, 2016) that express: "according to the waste characterization conducted in 2016, 58% correspond to organic waste and 42% to inorganic waste (cardboard, paper, plastic, glass, wood, metal, scrap, rubber, textile, spotlights, batteries and non-hazardous sanitary waste, among others)" (p. 15).

In the aforementioned, it can be observed that the data of the organic component are high. This could cause contamination to the soil, water and air, as well as an impact on the human health. Therefore, it is essential to link society to have as a result decision, action, awareness and improvement of the life cycle dynamics of waste. This can avoid focusing on solutions or alternatives that only cover up pollution or the transfer of it to another place; i.e., these are reactive and waste storing measures, in which its used it not yet seen.

As regards to the classification of waste, it has suffered a reduction in Ecuadorian homes, so according to the INEC (2017a):

> In relation to the proportion of homes that did not classify their waste among the represented cities, a reduction is verified, the largest of which is recorded in Quito with a reduction of 9.71%, followed by Machala 7.31% and Guayaquil 3.24%. (p. 6).

With this background, it can be said that there is a decrease in environmental awareness in the main cities of the country. This may be due to the absence of information on how and where to place the waste, in addition to the lack of interest in households in terms of environmental issues.

The waste scenario in the country is mainly based on generation, collection and disposition. The use of waste and its reuse are in a second scenario. There is no proper classification of trash from its origin in many places making it difficult to obtain materials of interest, because they are mixed with the rest of garbage, and since it is difficult to separate, it can lose its value and characteristics.

Organic waste can be seen as a resource, being used in different applications. Composting is one of them, consisting of an organic fertilizer based on plant waste that improves soil properties and nutrition. It is a viable and economical option, which can be used in crops destined for food or ornamentation (Vargas *et al.,* 2011, pp. 39-40). Another type of fertilizer is vermicompost, which is produced through the action of the Californian red worm in organic waste (EMGIRS EP, 2017).

Incineration is another alternative for urban organic solid waste (RSOU), a process by which electrical energy can be obtained. Calvachi and Navarro (2013) conducted a study about the calorific value of RSOU in Ecuador, whose results show an interval between 15.86 Kj/g to 17.08 kj/g (p. 98). This proves its viability for incineration, as according to the ISWA (International Solid Waste Association, 2013) The calorific value of the waste must be at least 7KJ/g for being efficient (p. 5).

From this, it is also possible to obtain biogas, which is the result of anaerobic degradation of organic matter; this can be used for heating, transportation, electricity generation, etc. The production of biogas in a controlled way allows the reduction of greenhouse gases (GHG). Because, in combustion, methane is transformed into two products: CO_2 and water, avoiding its direct diffusion into the atmosphere, as shown in Equation 1. This is an advantage, since the uncontrolled methane produces more pollution than CO_2 (Romero, 2010, p. 344).

$$CH_4 + 2\,O_2 \rightarrow 2H_2O + CO_2$$
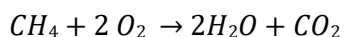
Equation 1

In this context, biodiesel and bioethanol are biofuels, whose raw material can also come directly from crops or from residues. Its application focuses mainly on transportation, and have different advantages: GHG emissions are reduced, mainly CO_2 up to 50%. According to Jaramillo and Zapata (2008) "Biofuels are biodegradable, 85% degrade in approximately 28 days" (p. 45). With this appreciation, the importance of the use of biofuels is highlighted, since their decomposition is generated in natural conditions causing less impact to the environment.

When analyzing the production cycle of biofuels, it is possible to compare how to obtain them, since if it is done through food crops such as maize or sugar cane, it could violate the nutritional and environmental safety. There is also an impact and greater use of natural resources. On the other hand, if the production is from materials without any value such as waste, organic waste, this would mean less pollution, reduced waste and reduced costs that are generated at its disposal.
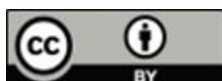
In the educational field, Ecuador has a national environmental education strategy for the year 2017-2030. Its objective is to link public institutions, private (at initial levels, basic and higher education) and citizenship in sustainability, i.e., it is an extensive process that links other systems such as economic, political and social.

As a result, according to the website of the MAE (Ministry of Environment, 2017), this plan showed that it has not achieved a high optimization level of resources and research. There are deficiencies in the classification of waste and teacher training in environmental issues. Another of the identified problems is found in the institutions of higher education (IES), where more than 50% of them have environmental policy. However, based on the percentage mentioned only 44% apply it properly.

Another recent educational program is the so-called "Land of Children and Youth" (TINI), undertaken by the Ministry of Education of Ecuador since 2017 whose purpose is to create culture and environmental awareness in educational institutions. It provides a physical space for both young people and children, in which they will be main actors in the care and development of life and biodiversity.

Youth and children interact with the environment through activities such as care, planting of plants and trees, construction of bird shelters, etc. Among the main components used for the implementation of the program are the management of natural resources, environmental health, socialization, expression, organization and management. It should be noted that within the environmental health component, its activities focus on the segregation of solid waste, in addition to its use for the elaboration of organic fertilizers (Ministry of Education, 2016, pp. 11-19). Despite government efforts, environmental culture has not achieved the expected results. Therefore, dynamic programs are needed according to specific groups. The following information will show environmental education, its characteristics, approaches and relevant traits.

Environmental education (EA) must be integral, related to socio-cultural, economic, technological, political and environmental systems. In other words, the perspective of man and nature is changed, as Novo (2009) states in a new ideological vision in which "It contemplates the human being not as a ruler or owner of nature but as a part of it, as a species that, with its undoubted singularities, is challenged to understand and develop in harmony with the rest of the biosphere" (p. 202). This emphasizes the influence that nature has on us and that the study of what surrounds us represents our own knowledge. We are part of a system, formed of relationships and elements that make up a whole, therefore any decision will affect that whole.

According to Castillo (2010) in the article on the importance of EA as a current problem, it is established that learning is based on the creation of experiences, knowledge and values that transcend over the time. It does not seek memorization, on the contrary, it seeks the active participation to ensure the permanence of awareness and that it becomes a habit. An ethical orientation makes possible the nexus for sustainability, through the change of attitudes and considerations towards others. All this results in the possibility of achieving a critical thought and better problem solving (Castillo, 2010, pp. 105-108).

All of the above makes environmental education a key factor in the development of new methodologies in the use of waste, this being an opportunity for new generations to know and take action against problems as the accumulation of waste, that were previously considered mere waste, without commercial value, and which are currently seen as raw material for future use.

This article will address four main sections: environmental education by target groups; the influence of ICTs and social networks on environmental education and environmental education opportunities in the use of organic waste.

2. Environmental education by target groups

2.1 The environment and the age

In the study of Pol and Castrechini (2013) in Cataluña, an evaluation was carried out for children, young people and adults from 9 to 35 years old to determine their ecological behavior. It is concluded that the EA has greater effectiveness in the age groups between 8 and 13 years, since they present higher scores that mean greater knowledge, awareness and environmental values. On the other hand, the environmental awareness in adolescence suffers a decrease that reintegrates again in the adulthood.

With the time, the environmental awareness acquired at an early age is lost. The absence of environmental programs is often not the cause; it has to do with the psychological processes and changes that adolescents experience. The rebellion towards established norms and the lack of concordance between verbal communication and actions in authorities, encourage a deficiency of commitment to environmental issues, information observed in Figure 1.
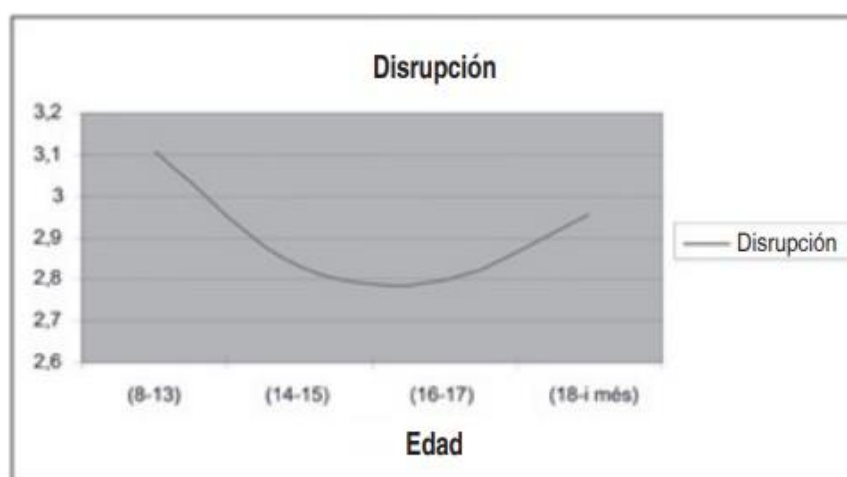
Figure 1. Disruptions in EA. Source: (Pol and Castrechini, 2013, p. 341).

As shown in Figure 1, in the ages corresponding to childhood, from 8 to 13 years, there are high scores in terms of knowledge and environmental values. From 14 to 17 years, there is a notable reduction, a very marked disruption. However, in adulthood this environmental awareness increases again, but does not manage to match the scores of initial periods.

Children are in a formative stage both in education and in values. They are more perceptive in terms of new knowledge. They are conditioned to follow the parameters that are established. That is, there is talk of greater control towards them and can generate greater influence in their habits.

The decrease in environmental awareness in adolescents is reflected in another study conducted by Boeve et al., (2015), where students from 12 to 19 years old participate in 51 schools in Sweden. It is reaffirmed that in "ages up to 13 years, there is a rapid incorporation of environmental concepts and attitudes. Meanwhile, at higher ages, motivation and interest
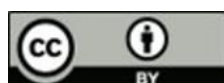
suffer a significant decrease" (pp. 15708-15711). The same is true in another study conducted by Olsson and Gericke (2015), in students between 12 and 19 years in schools in Sweden. Where it is established that there is a "reduction in the efficiency of EA in adolescence. It is also noted that there is no total reduction in the EA, since in the adulthood it ascends again" (pp. 41-42).

This can be explained by the problems of this transition phase, characterized by the constant inner struggle, key to the definition of personality and values. Interpersonal and intrapersonal relationships are built; there are constant conflicts of power between adults due to the difference of thoughts and the search for their identity. The social group has more influence than adult people, and the thinking focuses on their individuality and in the present, their main concern is their sentimental and social life (Garza, 2003, pp. 36-38).

The university phase underlines the lack of involvement in environmental problems. People do not feel part of the solution, suppressing their responsibility and accepting the consequences that bring about the destruction of the environment. The social influence determines the environmental behavior of the people, usually these actions serve as parameter of behavior (Pol and Castrechini, 2013, pp. 345-346).

In addition, in the EA it is recommended to apply different strategies according to the level of maturity and ages, as stated by Corraliza (2016), professor of environmental psychology; in his study he says that there are 4 phases for EA. The first phase is to develop positive feelings through a physical and visual approximation of the environment. The second phase emphasizes prevention and the beginning of practice for the creation of customs and experiences. The third phase is dedicated to children over 12 years old with a proactive and conscious vision, locating personal reasons to work in favor of the environment. The fourth phase aims to establish a systemic panorama in relation to different social and intrapersonal contexts.

According to Díaz *et al*. (2014) reference is made to the EA, in early childhood from 3 to 5 years old in Bajo Cauca, Department of Antioquia, Colombia. Cognitive processes in this phase are influenced by the bond that can be established with them and the nature.

As for the environmental understanding of children, they distinguish their components through their senses, in a physical and visual way. They have ideas about the care of the environment, but they have a naturalistic conception, where the human being is not part of it, i.e., they feel alien to nature.

The formation of children includes a perception of extensive systems not immediate to the human being, such as jungles, parks, aquatic ecosystems, terrestrial, etc. The meaning of the environmental word also includes systems in which we inhabit as our home, school, work, streets, our city. With the understanding of these aspects, it is possible to encourage the direct action of ecological behaviors, visible in the environment in which the children coexist.

In the study of Vázquez and Manassero (2005), the action towards the environment is examined in 774 students from 14 and 16 years old who are coursing the last year of secondary education at international level, from which 57% are women. In general, they present a moderate attitude, driven mainly by the idea of sustainability, responsibility and defense of the animals (pp. 315-316).

Students express their commitment to environmental care, but they develop negative criteria of externality toward environmental problems in them. There is an underestimation of the risks that may occur. Specialized participation to repair environmental damage as the only resource to resolve conflicts is discussed. In a way, scientific and technological advice is necessary, but everyone's participation is also necessary.

It is observed that there is a concept of change and conservation, but there is a passive attitude. The problem is known, but this environmental awareness is not materialized. The pollution is blamed or attributed to the great powers, like its solution.

On the other hand, in another study conducted in Chile in students between 14 and 16 years old, it is concluded that they are intended to help the planet in large measure, hence Gädicke *et al*. (2017) say "Students between 14 and 16 years have done activities as energy and water savings (70%), reduction of car use (30.8%), waste classification (24%) (p. 114). However, the constancy is not estimated in their actions, they could have taken it into practice for short periods of time, again to return to the consumerist practices.

The EA should start at an early age, in the stages of childhood and adolescence, because there can be achieved the construction of a link with the environment. In the first instance through sensory perceptions and exploratory recognition of what surrounds them; later to foster a critical and reflective thought in a space of trust and communication. The aim is to strengthen the first thoughts and experiences obtained, carried by the personal growth.

In the EA, there is no correct age for initiation, Corraliza (2016) expresses that the EA is not old, because since we are born we are already in contact with nature, which is our home, source of life and feelings. Therefore, knowledge and preservation of the environment becomes a necessity because of the role it plays in our development to be able to take advantage of it responsibly and is also a source of enjoyment.

2.2 A matter of gender

Perceptions differ in gender, women have more environmental qualities. The men have an impersonal attitude of the environment, a minimization of effects and total confidence in the scientific branch and in the developed countries, and they have more conviction in the great powers as alternatives for preservation. Instead, women see as a measure the linkage of all the elements involved in the problem. This analysis is seen in the international study of Vázquez and Manassero (2005) with students from 14 to 16 years old (pp. 319-320).

Gädicke *et al*. (2017) conducted an investigation focused on gender differences in environmental perception, in which participated 452 students from 14 to 16 years old, who were evaluated through a weighting, taking into account their perceptions of environmental problems. As a result, women showed greater interest, concerns at the local or regional level; as for environmental problems, mainly on climate change (pp. 115, 118, 119).

One of the reasons for the role in the environmental perception of women is their level of maturity, which is associated with the characteristics imposed by the society, such as care, problem solving, concern for others, etc. At a neuronal level, in women a process of improvement at an earlier age is performed. Mental processes are optimized through the recognition of the most important neuronal connections. But this does not want to discredit the maturity of men, because this factor relates to living conditions and experiences (Castillero, 2017).

In the study of Palavecinos *et al.* (2016), 237 students from Spain and Chile were examined, who were from 18 to 26 years old in Chile and from 18 to 53 years old in Spain. By contrasting the study on different continents, it is observed that students have very similar environmental behaviors. This statement is interesting because there are great differences in dissemination, implementation and availability of information and projects between countries. On the other hand, Chilean students showed a higher environmental emotional link, while the Spaniards showed some indifference, and one more time the role of women in the environmental struggle is strengthened, they are recognized as pro-environmentalists, and have greater connection and empathy (pp. 146-148).

There is greater concern in the fact that the economic development increases the purpose of contributing to the environment, as in the case of Spain; but despite having access to a large amount of information, this does not guarantee that these intentions will be put into practice. The cognitive approach is important, but emotional training as well, because these are factors that influence the behavior. The construction of an affective connection reinforces the interest, motivation and entrepreneurship of favorable actions, and emotional stimuli are capable of creating stronger behaviors.

3. ICT and social networks in environmental education

ICTs are instant knowledge portals available to all and are strategic when it comes to disseminating information and promoting better interaction with students. These tools have a great influence on the way people think, so their management carries great responsibility.

According to Carvajal (2014), their importance in the environmental area is that "ICT are interdisciplinary technologies that can promote the profound transformation necessary in global efforts to fight for sustainability and sustainability of the planet" (p. 67). Science is expressed through the media, in experiences, research, models, programs in different branches, and can be adapted and improved for the benefit of a society. Sharing these experiences enables the strengthening of global cooperation towards change-generating practices.

The digital age is very marked in children, who are born learning how to manage technological tools. They have easy access to it and can explore different scenarios that change the look of the planet. But to do so, there must have a formed criterion, capable of discerning the best information and assimilating it properly. These tools are also a problem, because they go according to social tendencies and have a programmed obsolescence that forces it to consume more and more. This is the case of cell phones that are common tools for the search of information, connection and communication, but it has been seen that the digital connection weakens the emotional connection.

The management of libraries and online information reinforces the knowledge taught in the classroom. It is switched from closed systems to open systems, where students develop the subjects they have received. Curiosity causes questions and response that can be found in these media in both colloquial and technical language. The teacher will serve as a guide, trainer of criteria and support to distinguish information lacking of support. It is not possible to eliminate the role of the teacher who acts as mediator between the students and the technological tools. In addition, it creates a space for discussion and tutoring to strengthen knowledge (Zúñiga, 2004, pp. 3941).

Technology has potential for proactivity and action in the face of natural disasters; it communicates immediately and decentralizes help. It is a source of contribution, participation and geographic information to enhance prevention. Real-time monitoring of the physical environment gives a perspective of what is happening around, and it adapts society and creates resistance to environmental problems (Johnson and Valdiviezo, 2011, p. 9).

According to figures from the Spanish Foundation for Science and Technology (FECYT), in the survey of Social Perception of Science and Technology of 2018, in Spain

> television is the most used source to obtain information in 75%; 40% of the population uses the Internet as a first option to be informed; social networks are the most used in people under 35 years, followed by visual platforms like YouTube. On the other hand, according to the INEC (2017b), 58% of the population in Ecuador over 5 years old uses the Internet, out of which 74% do it at least once a day. The use of social networks is massive with 91% (pp. 14-15; 22.41).

As can be seen, the most important means for the dissemination of information are the visual ones like the television, besides the Internet that generates influence through the social networks. Due to their high use, they are tools with potential to educate the environmental awareness.

The media has more capacity for influencing. The problem lies in the type of information shown, i.e., if it is a tabloid it seeks to draw the attention of users through shocking news. The commitment of the media is to transmit objective information based on research and in an understandable language for the population. Therefore, it is necessary to prepare journalistic environmental issues to achieve a proper interpretation.

An investigation was carried out by Cervantes (2015) in Monterrey in the year 2013, in which the amount of environmental information was estimated in television, radio and press channels. The results showed that there is no great interest in showing this type of information, instead, entertainment, show biz and scandals are preferred. There are ecological-type sections, but they are not enlarged because of their lack of interest. The author determined that:

> Out of the 266 times environmental issues were addressed, 208 were in the news providing information of a non-pedagogical fact. Only 15 times a didactic approach was given with pedagogical objectives. The observed media oriented 66 times the information they provided on the environment towards reflection and awareness (p. 19).

These figures show that there are reports of environmental problems, but they do not go deeper into the action against them. The news does not focus on creating culture in the population, only in showing facts of high impact. Many times, there is a space for reflection, but it is focused on negative aspects and on a global level. They do not focus on the problem, but on their actors. The global reality is presented with greater emphasis, without contemplating the local reality, which is part of the problem.

On the other hand, social networks are the most used by the world in a wide range of ages. The most used social network is Facebook, hence Ruiz (2016) states that:

> Facebook reached 1.49 billion of active users in July 2015, and in August got the milestone of 1 billion of users connected on the same day (1 in 7 inhabitants of the planet). Twitter and Linkedin continue to grow every year, and the use of photo and video platforms such as Youtube, Instagram or Pinterest has increased exponentially.

Facebook is the most attractive social network with the greatest number of users. This can be a tool for transmitting truthful, creative and visual information. It is a mixture of other platforms, as it includes videos, photos, opinion forums, groups with different interests, etc. The information published is seen as part of the leisure, it informs and at the same time it entertains. The disadvantage of managing this social network is that any individual can report messages that are not verified or are not in context. This can mean negative positions without any foundation. Other aspects are seasonal trends, actions that are not necessarily positive.

An example of the use of Facebook in education is manifested in the research presented by Acosta (2013), where a pilot plan was conducted for environmental engineering students from 16 to 21 years old, taking the advice of teachers.

The main objective of the research was to create a Facebook group to disseminate general news, events, forums and congregations for research and describe the reaction of the students. Teachers are vital elements in the administration of the Facebook group, as they are a representation of credibility and security in the information.

The reactions against the publication of news were not positive, with few comments and participation, the students preferred and showed better response to the calls to form research groups. Posting YouTube videos on this platform resulted in a lot of feedback from both students and teachers.

It highlights the use of Facebook for its worldwide recognition, easy use, privacy and security conditions, potential for spreading information to more especially young users. Facebook is characterized as a platform dedicated to entertainment; this can hinder the seriousness of the teaching process. Young people see this space as theirs, where they find relaxation and conviviality with their friends. More serious social networks can be used, dedicated to the opinion as Twitter (pp. 62-64)

ICT makes instruction efficient in children, as in the research of Salinas *et al*. (2016), learning was assessed in fourth-year primary school children in Campeche, Mexico. For the teaching, 4 resources were used: Prezi platform, interactive videos, blog, elaboration of a comic. The acceptance of these tools in children is shown in Figure 2.
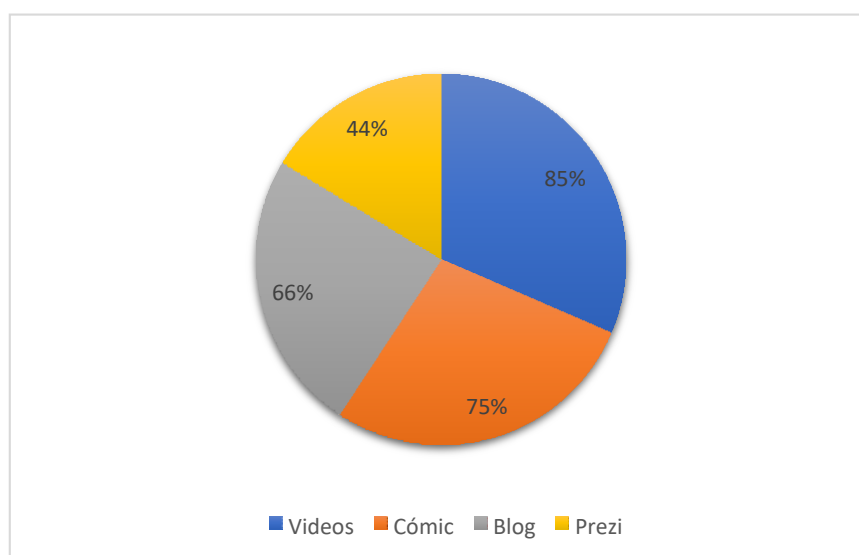
Figure 2. Acceptance of ICT in children. Source (Salinas et al., 2016, p. 3003).

As can be seen, the visual tools are the most prominent, and the videos presented had more impact and attention on the children. In addition, with the use of these tools it was able to increase the environmental interest of students by 91%, according to surveys conducted.

The visual causes greater impact on children, it draws more attention and makes their retention more effective. The percentage that did not agree with these tools may have intelligences related to the kinesthetic part, reason for which methodologies must be directed to various types of intelligence. The diagnosis of children is imperative to undertake with the cognition processes.

Teenagers and university students have different sources and motivations for the search for information. In Hungary, a study was conducted comparing these aspects in university and college students, as shown in Figure 3.
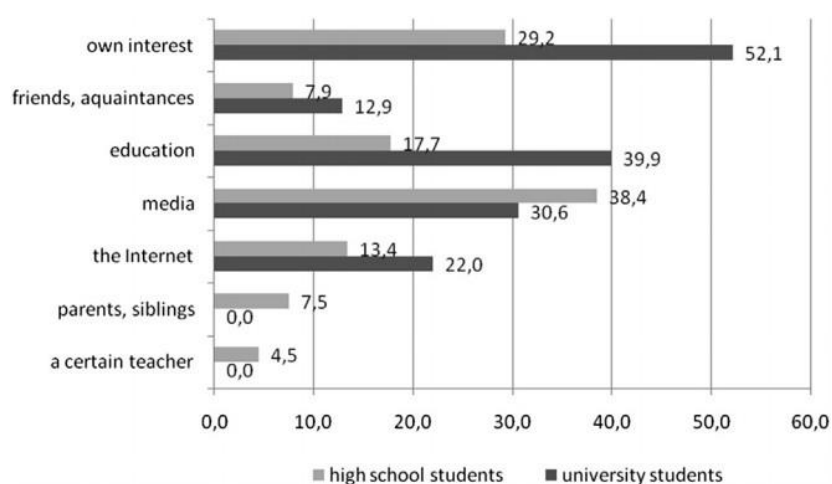
Figure 3. Sources and motivations of EA. Source: (Zsóka et al., 2013, p. 129).
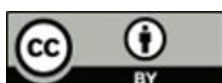
College students have little personal interest in environmental issues, contrary to university students. The largest information instrument according to both groups is the media, followed by the Internet.

For college students, the motivation to improve their education is low; meanwhile, for college students this is the second reason that motivates them to investigate or deepen the issues. The role of parents, friends and teachers as a source of information is less. This aspect was not considered for the survey in university students (Zsóka et al., 2013, p. 130).

School students do not develop personal interests in environmental issues, this may be because they do not consider it part of their lifestyle. They are taught in schools, but they are taken into account only during the school period. The motivation is important because it impels us to know more, to have greater performance facing the problematic, especially to make better decisions.

To improve the assimilation of EA in adolescents, it is necessary to combine the theoretical and practical part in the methodology, as well as to create environments of trust and horizontal communication with examples, anecdotes, etc. The research proposed by Pedroso and Menéndez (2017) highlights the edu-communication, i.e., videos, drawings, dramatizations, communication skills, made by themselves as a learning tool. All these activities require the integration of authority figures to give more strength and credibility to the projects, being its main achievement the motivation to continue with activities out of class and after completing the project. It is concluded that the best tool is the audiovisual, as it promotes the creativity of the students and allows them to have a better perception and tolerance of their environment (pp. 162-164).

4. Environmental education opportunities in the use of organic waste seen from different countries

In Latin America and the Caribbean, Urban Solid Wastes (RSOU) are the main components of waste, as shown in Figure 4.
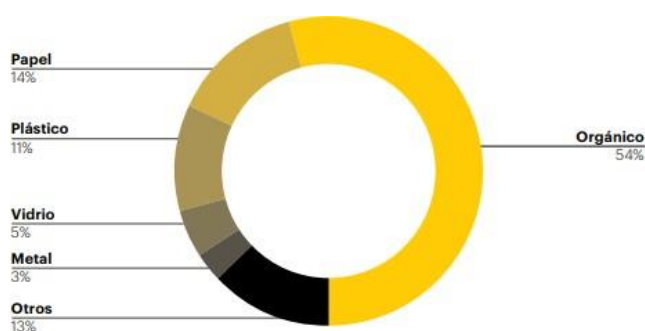
Figure 4. Waste composition in Latin America and the Caribbean. Source: (Graziani, 2018, p. 14).

RSOU exceed inorganic waste by 17.4%. Inorganic materials are also importance due to the use of technologies, more accelerated lifestyle, use of products with reduced lifespan. The RSOU include residues derived from the food and products of ornamentation activities such as leaves, and stems. Figure 5 shows the management of waste in several countries in the year 2017.
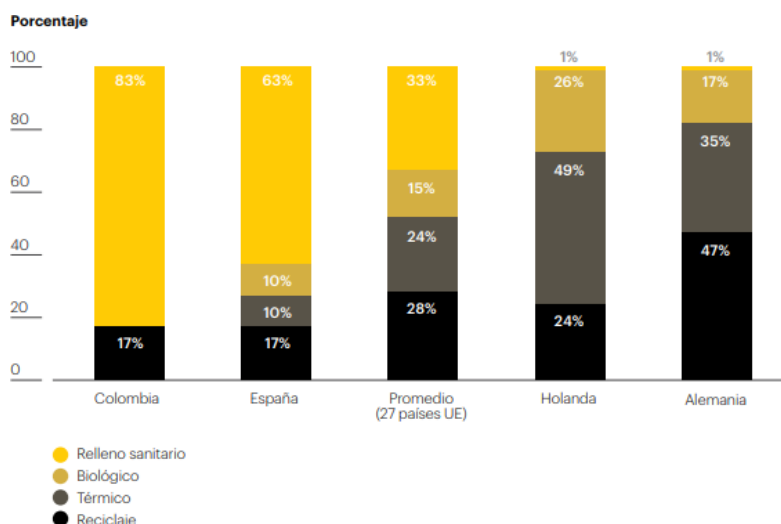
Figure 5. Waste management in the world in 2017. Source: (Graziani, 2018, p. 20).

The figure above shows the reality of developing countries compared to the most developed, in which technological, cultural, educational and political problems are evident. If Colombia is used as an example, it can be seen that landfills are of vital importance for waste management, as only 17% is recycled and the biological and thermal treatment is not considered. On the other hand, countries such as Germany and the Netherlands use landfills at a rate of 1%; in other words, 99% of waste is used in recycling and thermal processes.

In Norway domestic waste is used as fuel mainly in heating. This process is developed in the Klemetsrud plant. The energy obtained from these wastes has an equivalent proportion of 4 to 1 with traditional fuels. Transportation costs are compensated with their energy capacity. This plant is intended to produce electricity through turbines driven to homes and public institutions; even some cities in the United Kingdom take their garbage to the city of Oslo, receiving an economic bonus for it.

Another way of using RSOU in Norway is through biogas, which is a means of feeding for transportation as it is used as biofuel. Thus, 2 Kg of RSOU can produce 1 liter of fuel (Price, 2013). Similar practices are carried out in the Netherlands, where the circular economy is primed to avoid the deposit of wastes to a lesser possible percentage. Its principles are the processing, obtaining of energy and recycling used in the construction; being prevention the main tool in waste management. For all of this to take place, strong educational policies and attractive economic incentives are essential (Ossa, 2018).

At school, students perceive garbage as a problem, as it is inevitable to generate organic waste. In schools its characterization allows to know its potentiality in terms of recycling or utilization. This can be a source of savings, obtaining economic benefits, reducing the volume of waste and space and increasing the lifespan of landfills.

About 40% to 50% of waste in schools are organic, about 0.134 Kg/day of food waste is produced. In some schools in Sao Paulo there is a proportion of up to 90% of them. These materials can be used for the benefit of the same institution in gardens and orchards as fertilizer replacement, resulting in improved properties, structure and water retention in the soil. With this practice, the volume of trash can be reduced in 4 tons per month. Composting generates a positive impact on GHG abatement with a reduction of 49.86 Kg. of CO_2 equivalents/tons of waste at the domestic level. Thus, a large number of schools in Sao
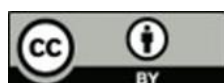
Paulo use composting as a practical tool for education, along with conceptualization, affection and environmental responsibility (Ricci, 2016, p. 13).

In the Research and Advanced Studies Center (CINVESTAV), Mexico, a waste sampling was carried out for 3 years, and it was determined that 48% of it corresponds to organic matter. In the Iberoamerican University of Mexico, a similar figure was obtained: 52% of organic matter feasible for composting (Ruíz, 2012, p. 95).

Once the characterization was carried out, an environmental program was developed through workshops on recycling and separation, techniques for composting, waste disposal and dissemination of results. Organic matter was mainly used in composting. Despite technological deficiencies, infrastructure and personnel, savings of approximately $5000 were obtained only in the year 2003. Including a decrease in the volume of waste by 67% (Maldonado, 2006, p. 64).

In order for this type of project to take place, it is necessary to increase environmental awareness campaigns for all its members, being the main problem the lack of separation from the source, environmental culture and the diversion of responsibility to the administrators of the institutions. Involving people who generate garbage, in the separation and use of waste increases environmental awareness.

Second-generation biofuels are another alternative for lignocellulosic biomass, which represents a large amount of organic waste consisting of cellulose, hemicellulose and lignin; such as forest and food-type waste (Mueller-Langer et al., 2013, p. 113). Its main representatives are bioethanol and biodiesel, whose world production is shown in Figure 6.

Figure 6. Global production of biofuels (millions of tons of oil equivalent). Source: (BP Global, 2018).

Biofuels have gained worldwide participation since 2007, as a potential replacement for gasoline. Bioethanol in South and Central America has not suffered a significant increase during the years 2007 to 2017, as in Europe and the rest of the world. In North America its

production in 2007 constituted more than double in 2017. The participation of biodiesel has remained higher than bioethanol during the years of study.

The production of biodiesel is carried out through esterification processes, whose products are ester and water. The hydrocarbon (R') of the alcohol replaces the hydrogen of the carboxylic acid (COOH) as shown in Figure 7.

Figure 7. World production of biodiesel. Source: (Matthey, S.F.).

The esterification technology allows to obtain non-acid esters through a reaction of liquid carboxylic acid with alcohol (Matthey, s.f.).

The production of bioethanol is carried out through the anaerobic fermentation of sugars. Treatments such as enzymatic hydrolysis are usually required for the release of simple sugars present in the raw material. As a result, monosaccharides are obtained easily assimilated by yeasts, microorganisms that through the fermentation process transform simple sugars into ethanol, as shown in Figure 8 (Kanal, s.f.).
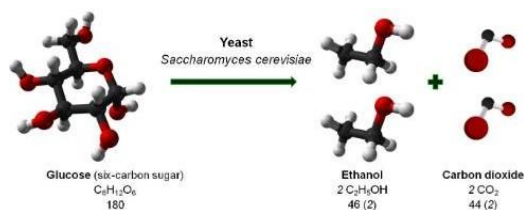
Figure 8. Global production of bioethanol. Source (Kanal, s.f.).

The fruit peels like banana, papaya, mango, pineapple, etc., are a good option to obtain bioethanol, due to its high composition of sugars and carbohydrates. The waste produced corresponds to approximately 50% of its weight (Jahid *et al.*, 2018, p. 2). These wastes are present in the composition of urban waste, as well as vegetable waste, tubers, etc.

Methanol is considered as another biofuel, as it can be generated through organic waste, sewage, feces, etc. It is also a byproduct of the fermentation of alcoholic beverages; and it is also used as an additive to gasoline, as well as bioethanol. It can be obtained from methane, natural gas product. The disadvantages in its production is that it only presents economic feasibility at the industrial level, besides the dangers of toxicity in its manipulation (Leiva, 2011).

The EA is linked to the practicality and the best way to do it is through the waste with which we live daily, due to its easy reach and application. Composting is the best way to strengthen theoretical knowledge and create awareness as consumers. The contact with the problems motivates proposals and ideas of change, allows the inclusion of the children in simple activities that create experiences and knowledge on the reality of the garbage.
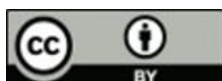
5. Conclusions

Education is a process that is constantly changing due to the dynamism of its nature. Developing the practical aspect through projects that can be carried out in a simple way with the scope in the daily life, consolidates the empowerment towards a new lifestyle, that is conscious, critical and able to see reality and propose solutions to environmental conflicts.

Environmental education should be taught from the initial stage, involving children and making them feel part of the environment, since at this stage, it is more feasible to capture their attention through an interaction, visualization, excursion and execution of projects. Thanks to the perception of their environment and their problems, they acquire autonomy to make decisions and undertake actions, ideas or projects. Children act as promoters of change with influence to adults and directly to their parents. Each person is different with different intelligences and personalities, therefore, the methodology should not be static, it must assume a creative position with several alternatives to ensure the understanding of all.

ICT is a means of sensitizing and transmitting environmental information, complementing the EA. They are instruments that must be in accordance with the needs and characteristics of target groups. They are opportunities to promote dialogue and experience without frontiers and in a faster way. The most important ones correspond to the audiovisual media, such as television and videos, and it is proved that these have been more effective in children. On the other hand, social networks are used by almost every person daily and several times in the day, and these may be an opportunity to disseminate information, but through official entities that have bibliographic support, because they can generate negative or uncertain positions that do not contribute with any benefit to society.

Large amounts of waste are arranged in landfills to remain there for long periods, but these can be used as input for clean technologies, which cause minimal impact to the environment. The useful life of these wastes can be extended through their knowledge and characterization. One of the simplest practices that can be carried out in educational institutions is composting, where the large amount of organic matter is used to improve soil conditions. These activities allow the resolution and approach of everyday problems in children, who are the best information receivers. Thus, they feel part of the solution and are able to replicate it outside their educational environment.
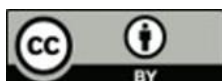
References

Acosta, V. (2013). Las redes sociales como herramienta para la educación. *Journal Technology, 12*(1), 55-65.

Boeve, J., Gericke, N., Olsson, D., & Berglund, T. (2015). The Effectiveness of Education for Sustainable Development. *Sustainability, 7*, 15693-15717.

BP Global. (2018). *Biofuels production.* Recuperado el 15 de febrero de 2019, de https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/renewable-energy/biofuels-production.html

Calvachi, V., & Navarro, N. (2013). *Evaluación Ambiental de la Incineración de los residuos orgánicos biodegradables de los residuos sólidos urbanos.* (Tesis de grado)*.* Escuela Politécnica Nacional, Quito.

Carvajal, A. (2014). *Las TIC, la educación y un ambiente sustentable y sostenible.* Recuperado el 13 de febrero de 2019, de OEI: https://www.oei.es/historico/divulgacioncientifica/?Las-TIC-la-educacion-y-un-ambiente

Castillero, O. (2017). *¿Por qué maduran antes las chicas que los chicos?* Recuperado el 18 de febrero de 2019, de Psicología y Mente: https://psicologiaymente.com/personalidad/por-que-maduran-antes-chicas-que-chicos

Castillo, R. M. (2010). La importancia de la educación ambiental ante la problemática actual. *Educare, 14*(1), 97-111.

Cervantes, M. (2015). Educacio n ambiental en los medios de comunicacio n. *Ciencia UANL*(74), 16-19. Obtenido de Ciencia UANL: http://cienciauanl.uanl.mx/?p=4439

Corraliza, J. (14 de septiembre de 2016). *¿A qué edad debería comenzar la educación ambiental y quién tendría que impartirla?* Recuperado el 13 de febrero de 2019, de HUFFPOST: https://www.huffingtonpost.es/2016/09/14/ninos-educacion-reciclaje_n_11989524.html

Díaz, D., Castilo, L., & García, P. D. (2014). *Educación ambiental y primera infancia: Estudio de caso Institución Educativa Normal Superior y Fundación Educadora Carla Cristina del Bajo Cauca.* (Tesis de grado)*.* Universidad de Antoquia.

EMGIRS EP. (2017). *Residuos orgánicos de Quito serán aprovechados mediante lombricultura.* Recuperado el 11 de febrero de 2019, de https://www.emgirs.gob.ec/index.php/noticiasep/340-residuos-organicos-de-quito-seran-aprovechados-mediante-lombricultura

FECYT. (2018). *Encuesta de Percepción Social de la Ciencia y la Tecnología en España.* Recuperado el 14 de febrero de 2019, de https://icono.fecyt.es/informes-y-publicaciones/percepcion-social-de-la-ciencia-y-la-tecnologia-en-espana

Gädicke, J., Ibarra, P., & Osses, S. (2017). Evaluación de las percepciones medioambientales en estudiantes de enseñanza media de la ciudad de Temuco, Región de La Araucanía. *Scielo, 43*(1), 107-121.

124
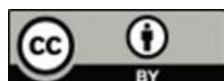
Garza, O. (2003). *Influencia de laducación ambiental en la formación del estudiante de la preparatoria No. 13 de la U.A.N.L.* (Tesis de posgrado)*. Universidad Autónoma de Nuevo León, México.

Graziani, P. (2018). *Economía circular e innovación tecnológica en residuos sólidos: Oportunidades en América Latina*. Recuperado el 19 de febrero de 2019, de SCIOTECA: http://cdi.mecon.gov.ar/bases/docelec/az4041.pdf

INEC. (2016). *Estadística de Información Ambiental Económica en Gobiernos Autónomos Descentralizados Municipales.* Recuperado el 15 de enero de 2018, de https://bit.ly/2IL4aY7

INEC. (2017a). *Módulo de Información Ambiental en Hogares.* Recuperado el 14 de febrero de 2019, de http://www.ecuadorencifras.gob.ec/documentos/web-inec/Encuestas_Ambientales/Hogares/Hogares_2017/DOC_TEC_MOD_AMBIENTAL_ENEMDU%202017.pdf

INEC. (2017b). *Tecnologías de la Información y Comunicación.* Recuperado el 14 de febrero de 2019, de http://www.ecuadorencifras.gob.ec/documentos/web-inec/Estadisticas_Sociales/TIC/2017/Tics%202017_270718.pdf

ISWA. (2013). ISWA Guidelines: Waste to Energy in Low and Middle Income Countries. Obtenido de http://www.waste.ccacoalition.org/document/iswa-guidelines-waste-energy-low-and-middle-income-countries

Jahid, M., Gupta, A., & Kumar, D. (2018). Production of Bioethanol from Fruit Wastes (Banana, Papaya, Pineapple and Mango Peels) Under Milder Conditions. *Journal of Bioprocessing & Biotechniques, 8*(3), 1-11.

Jaramillo, G., & Zapata, L. (2008). *Aprovechamiento de los residuos sólidos orgánicos en Colombia.* (Tesis de posgrado)*. Universidad de Antoquia.

Johnson, M., & Valdiviezo, A. (2011). *TIC y medio ambiente*. Recuperado el 13 de febrero de 2019, de Newsletter: https://www.cepal.org/socinfo/noticias/paginas/9/30389/newsletter14.pdf

Kanal, S. (s.f.). *Bioenergy Research Group*. Recuperado el 22 de febrero de 2019, de http://www2.hawaii.edu/~khanal/fungal/biofuels.html

MAE. (2017). *Estrategia Nacional de Educación Ambiental*. Recuperado el 23 de enero de 2018, de http://www.ambiente.gob.ec/wp-content/uploads/downloads/2017/11/5-Estrategia-Nacional-de-Educacio%CC%81n-Ambiental.pdf

Maldonado, L. (2006). Reducción y reciclaje de residuos sólidos urbanos en centros de educación superior: Estudio de caso. *Ingeniería, 10*(1), 59-68.

Matthey, J. (s.f.). *Esterification technology*. Recuperado el 22 de febrero de 2019, de https://matthey.com/products-and-services/chemical-processes/core-technologies/esterification-technology

Ministerio de Educación. (2016). *Guía Introductoria a la metodología TINI*. Recuperado el 18 de febrero de 2019, de https://educacion.gob.ec/wp-content/uploads/downloads/2017/11/metodo-TINI.pdf

Mueller-Langer, F., Majer, S., & Perimenis, A. (2013). Biofuels: A Technical, Economic and Environmental Comparison. *Springer*, 110-137.

Novo, M. (2009). La educación ambiental, una genuina educación para el desarrollo sostenible. *Revista de educación*, 195-210.

Olsson, D., & Gericke, N. (2015). The adolescent dip in students' sustainability consciousness—Implications for education for sustainable development. *The Journal of Environmental Education, 47*(1), 35–51.

Ossa, F. (2018). *Lecciones de Holanda en manejo de agua y residuos*. Recuperado el 19 de febrero de 2019, de Semana: https://www.semana.com/vida-moderna/multimedia/las-lecciones-de-holanda-en-manejo-de-agua-residuos-para-enfrentar-el-cambio-climatico/441610-3

Palavecinos, M., Amérigo, M., Ulloa, J. B., & Munoz, J. (2016). Preocupación y conducta ecológica responsable en estudiantes universitarios: estudio comparativo entre estudiantes chilenos y espanoles. *Psychosocial Intervention, 25*, 143–148.

Pedroso, W., & Menéndez, Y. (2017). Vinculación de adolescentes con la gestión ambiental en comunidades costeras de Cuba, a través de la educomunicación y el audiovisual participativo. *Revista de Comunicación, 16*(1), 147-165.

Pol, E., & Castrechini, A. (2013). ¿Disrupción en la educación para la sostenibilidad? *Revista Latinoamericana de Psicología, 45*(3), 335-349.

Price, M. (2013). *Cómo Noruega convierte basura en combustible ecológico*. Recuperado el 19 de febrero de 2019, de BBC Mundo: https://www.bbc.com/mundo/noticias/2013/09/130923_ciencia_noruega_basura_energia_ng

Ricci, M. (2016). *A handbook for schools on organic waste management*.

Romero, A. (2010). Aprovechamiento de la biomasa como fuente de energía alternativa a los combustibles fósiles. *.R.Acad.Cienc.Exact.Fís.Nat, 104*(2), 331-345.

Ruíz, M. (2012). Caracterización de residuos sólidos en la Universidad Iberoamericana, Ciudad de México. *Revista internacional de contaminación ambiental, 28*(1). Obtenido de http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0188-49992012000100008

Ruiz, R. (2016). *Las redes sociales como herramienta para la Educación Ambiental*. Recuperado el 13 de febrero de 2019, de Comunidad Ism: http://www.comunidadism.es/blogs/las-redes-sociales-como-herramienta-para-la-educacion-ambiental

Salinas, H., Herrera, S. D., Álvarez, D., & Marquéz, A. (2016). Sustentabilidad y educación ambiental con el uso de las TIC'S y currículo. *ResearchGate*(1), 2997-3007.

Vargas, J. P., Buzón, J., Vergara, D., & Molina, E. (2011). Reducción de los Residuos Sólidos Orgánicos en Colombiapor medio del Compostaje Líquido. *INGENIARE*(11), 37-44.

Vázquez, Á., & Manassero, M. (2005). Actitudes de los jóvenes en relación con los desafíos medio-ambientales. *Infancia y Aprendizaj, 28*(3), 309-327.

126
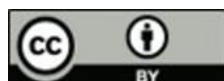
Zsóka, Á., Marjainé, Z., Széchy, A., & Kocsis, T. (2013). Greening due to environmental education? Environmental knowledge,attitudes, consumer behavior and everyday pro-environmental activities of Hungarian high school and university students. *Journal of Cleaner Production, 48*, 126-138.

Zúñiga, C. (2004). Aula virtual: nueva herramienta para la Educación Ambiental. *Revista Biocenosis, 18*, 38-42.
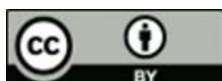
Authors

ALISSON YÉPEZ-CHÁVEZ is a student at the UTE University in Quito. She is finishing in the career of Environmental Engineering and Natural Risk Management.

She is currently developing her thesis on obtaining bioethanol from potato peel residues by using cellulolytic enzymes. Her main research topics include the use of solid waste, clean technologies and biofuels.

FAUSTO VITERI-MOYA obtained his PhD degree in chemical and environmental engineering from the Department of Chemical Engineering and Environmental Technologies of Universidad de Zaragoza (Spain) in 2017. He obtained the title of Magister in Environmental Management Systems at Universidad de las Fuerzas Armadas ESPE in 2013 and the title of agricultural engineer in the same university in 2008.

He is currently a tenured professor at the Faculty of Engineering Sciences and Industries in the Environmental Engineering and Natural Risk Management degree at UTE University. He is the leader of the research group "Environmental Protection Group". Among his most relevant works are publications in the process of pyrolysis of oxygenated and sulfur compounds, focusing on the identification and quantification of polycyclic aromatic hydrocarbons (Hap's), and meteorological processes, with 95% of publications in articles indexed in the journal Citation reports (JCR), in Q1 magazines. In addition, he has presented his work in more than a dozen international congresses including his participation in the "8th European Combustion Meeting 2017".
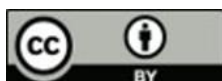
Revista *Cátedra of* the Faculty of Philosophy, Letters and Education Sciences of Universidad Central del Ecuador presents the following rules for the presentation, structure and submission process of the manuscript.

These style rules and instructions are mandatory for the authors, the article may be rejected if the author does not strictly follow the style rules and instructions provided.

INSTRUCTIONS FOR THE AUTHOR/S

PRESENTATION OF THE ARTICLE. TEMPLATE

The manuscript must fulfill 100% of the Microsoft Word provided.
The manuscripts presented for their publication in *Revista Cátedra* must comply with the characteristics that are detailed in the instructions of the template of the journal. The template details: Font, size, style, alignment, anterior spacing, rear spacing, lining and color as for main text style, title of the article, authors, abstract, keywords, section titles, lists and citations. The followings are detailed aspects that must be fulfilled for presenting the manuscript.

- To write the article with an extension of minimum 10 pages and maximum 20 pages, apart from the title, abstract, bibliography and presentation of the authors.
- To avoid extensive paragraphs and short paragraphs composed of a single sentence.
- To write the article in an impersonal way.
- To quote according to the international standards of American Psychological Association (APA), in its sixth edition.
- To use the accent and punctuation marks correctly.
- To present the manuscript in the Microsoft Word template proposed by the journal.

Download the template of the manuscript
http://revistadigital.uce.edu.ec/index.php/CATEDRA/about/submissions

STRUCTURE OF THE MANUSCRIPT

The structure of the manuscript that *Revista Cátedra* presents is aligned to the IMRAD format, acronyms of the four essential sections of a scientific article: introduction, materials and methods, results and discussion (International Committee of Medical Journal Editors, 2018). The IMRAD structure allows to communicate in an orderly, precise and logical way the results of the investigation process, used by doctors, engineers, academics, and in general any professional who wants to write an article. The structure is considered as the axis for all scientific work that wants to be published; although the IMRAD format includes the body of the article there are other important aspects that must be considered.
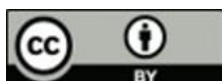
Download the instructions here
http://revistadigital.uce.edu.ec/index.php/CATEDRA/about/submissions

SUBMISSION PROCESS

Publication frequency
Revista Cátedra has a quarterly frequency, and is published in the period from January-April, May-August, September-December (It is published the first month of each period). The author must consider the submission dates and must take into considerations:

- The journal constantly receives articles and these must be submitted through the
  Open Journal System (OPJ), for which it is necessary that the authors register in this link. https://revistadigital.uce.edu.ec/index.php/CATEDRA

At the end of the final version of the articles, the documents that must be sent are:

- **Cover letter** asking for the publication of the article in the journal. Download the letter https://revista-catedra.facue.info/documentos/carta-presentación.docx

- **Authorship letter;** the authors of the manuscript declare that the content is original and the manuscript is not under revision in any other journal; it ratifies honesty and the veracity of the information. Download it https://revista-catedra.facue.info/documentos/declaracion-autoria.docx

ARTICLE VALUATION
Before submitting the manuscript through the OJS, it is recommended to verify the fulfillment of the http://revista-catedra.facue.info/documentos/valoracion-articulo.docx

TOPICS
The theoretical foundations of the Education Sciences in the different specializations and educative levels.

AUDIENCE
All the national and international researchers interested in publishing quality research papers that help in the improvement of the educative process. The journal accepts articles in Spanish or English.

ARBITRATION PROCESS
Double-blind revision, minimum two reviewers per article, with external evaluators.
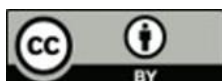
DIGITAL PRESERVATION POLITICS
The website of the journal provides Access to all articles published throughout the time.

ACCESS POLITICS
La Revista Cátedra provides open and free access to investigations with the aim of presenting knowledge. The articles are published under the licencia de Creative Commons Atribución-NoComercial-SinObraDerivada 4.0 Internacional (https://creativecommons.org/licenses/by-nc-nd/4.0/)

PLAGIARISM DETECTION
The journal uses the plagiarism **system *URKUND.***

Annexes

COVER LETTER

Director and Editors of the Journal *Cátedra*

Who subscribe,............................ (authors are identified with full names, listed with number, ordered according to their participation, indicate institution, city, country, email). We request the publication of the article in the journal Cátedra, for which it is considered:

 (Please answer the questions with a maximum of 50 words per question)

Problem presented:

Proposed solution:

Method used in the investigation:

The authors are responsible of the content presented in the manuscript as well of the writing, style, revision and correction of it.

Looking forwards to receiving a positive response of the manuscript.

In _____(city), On_____Days of the month_201_

Signature. (By the author or authors).

Copyright Declaration

The editors-in-chief remind the authors of the manuscript that the content should be unique and original, and is not under revision in any other journal simultaneously, so it is ratified the honesty and veracity of the articles. Otherwise they shall immediately notify the Editorial Board of the journal via e-mail.

The authors of the manuscript certify with their signature that the subject proposed, its execution, data analysis, and conclusions are true and authentic.

To formalize the cohesion of the original manuscript a form will be sent requesting some information with the signature of the author and the co-authors.

The full form is attached scanned using the same platform of the journal; this certifies the truthfulness and honesty of the manuscript.

AUTHORSHIP DECLARATION OF THE MANUSCRIPT (Mark all boxes)
☐ The manuscript is original and unpublished, has not been sent to another journal, congresses, chapters of books or any other similar publication for its revision and possible publication.
☐ The contents of the manuscript are not plagiarized. Textual references are quoted. It is ratified that the data and information are original.
☐ The information contained in the manuscript is subject to updated bibliographic sources of high academic value of previously published works.
☐ Figures, tables, data, images, maps, etc., are quoted, and have the necessary permissions for their reproduction to avoid possible demands.
☐ The data, content, which is not in bibliographic sources, but that is presented in the manuscript are intellectual property of the authors, and if so, they are responsible for having requested other sources obtained by verbal or written communication.
Partial or total duplication statement (check only boxes as needed)
☐ The manuscript is the result of an investigation, and some parts have been published previously in other journals (if it were the case, complete the pertinent information in observations
☐ This work is considered a translation of a similar publication, and is copied from full texts with the authorization of the authors and editors of the publication. This circumstance will be expressly recognized in the final publication (Complete the information in the observation section).

Authorship (Check all boxes)

☐ The authors who have signed have been part of the entire development of the manuscript. They also participated in draft document adjustments, approved their final version and agree with their formal disclosure.

☐ No responsible work signature has been omitted and scientific authorship criteria are satisfied.

Data collection and interpretation of the results (check all boxes)

☐ Those responsible for the work have avoided making mistakes in their methodology, as well as in the presentation of the results and in their interpretation. Otherwise, before or after the publication, they will indicate to the editor of the journal.

☐ The deductions or results of the investigation have been interpreted objectively.

Acknowledgment (check all boxes)

☐ All funding sources of this study are appreciated, concisely indicated by the body that financed it and the identification code.

☐ All the people who collaborated in the elaboration of the manuscript are mentioned in this section.

Conflict of interest (chech if necessary)

☐ Those who have signed the manuscript communicate that they have no links of any kind of commercial nature or with people or institutions that may have interests related to the manuscript.

Transfer of rights and distribution (please indicate in the box)

☐ Authors retain publishing rights without restrictions.

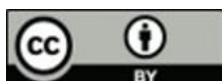**AUTHORSHIP**

LAST NAME	NAMES	SIGNATURE	DATE

In _____(city), on _____Month and day_____201_

Signature. (Of the author or authors).

Authorship statement. Adapted from: (Editorial CSIC., 2017, pag.2-5).

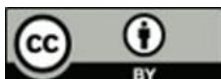| MANUSCRIPT EVALUATION TEMPLATE FOR EXTERNAL REVIEWERS			
Information of the article			
Received on:	Sent on:		Article code"
STRUCTURE OF THE ARTICLE			
INDICATORS		**VALUE FROM 0 TO 1**	**COMMENTS**
1. The title of the manuscript is in Spanish and English (maximum 20 words).			
2. The authors are identified with names and last names, they indicate their institution, city, country, e-mail and ORCID code.			
3. At the end of the article the authors provide their academic profile and institutions they work at.			
4. 4. The abstract in Spanish is included, with minimum 200 and maximum 250 words. The abstract is described in this order: justification of the investigation, objectives, methodology, important results and conclusions.			

5. The abstract in English is included, with the same extension and structure as the abstract in Spanish		
6.Keywords (Spanish) and Keywords (English): minimum 5 and maximum 8, separated by an hyphen and ordered alphabetically.		
7. 7. The introduction follows this order: brief description of the subject; problem statement; presentation of the idea to defend; justification, interest, importance, topicality and relevance of the study; bibliographic citations; and finally, a brief description of the structure of the document.		
8. The article has relevant literature		
9. Materials and methods are presented accurately.		
10. Tables and figure that present the most important information of the research and are numbered, these have a title and source (if are not of own elaboration). There is a maximum of 6 illustrative materials.		
11. A scientific discussion is presented		
12. The conclusions summarize the main findings, and explain the limitations of the research carried out.		
13. The quotes in the manuscript are adjusted to the APA norms		
OTHER CONSIDERATIONS		
14. 14. Writing: Non-short paragraphs (minimum 2 sentences) are used. Paragraphs not too extensive (maximum 8 sentences). Not too extensive sentences (maximum 25 words). Lack of spelling and idioms. Proper use of punctuation signs.		
15. Relevance of the topic: The article analyzes topics related to the educative area		
16. Originality: The article presents unpublished content that has not been previously presented in other publications.		
17. Bibliography: References are updated and are relevant, mainly from primary sources and scientific documents such as articles of congress, journals and books		
18. The bibliography corresponds to the authors that are stated throughout the article.		
19. The template has been used and the format of the manuscript is correct. See in https://revistadigital.uce.edu.ec/index.php/CATEDRA		
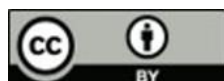
20. The article has a minimum length of 10 pages and a maximum of 20 pages, without including the title, abstract, reference and presentation of the authors.		
TOTAL, EVALUATION		
ABOUT THE FINAL RESPONSE OF THE EVALUATION		
It is recommended to publish the article		
This article is accepted with corrections (please indicate the corrections for the authors) **The corrections are attached and indicated in the document**		
The article is rejected (please indicate the reasons)		

Note: the minimum grade for the acceptance of the manuscript is 17 / 20; for publishing the article is 20 / 20

REVISTA
CÁTEDRA