

Dropouts from School in Ecuador: An Online Quality Education for All

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Abstract: Our main point to be developed refers to that Education and culture are fundamental elements to achieve progress in all spheres of life, especially treated in Ecuador, such as, health, feeding, security, and certainly education for all, among others. National census and international organizations have concluded that there is an increasing number of students that have dropout from school; a revision of dropout rates is performed. An additional problem is that according to the Council of Nationalities and Peoples of Ecuador (CODENPE), there are 14 nationalities and 18 different indigenous peoples in Ecuador with their own languages. Many of this potential young students, living in isolated areas, with economical vulnerability and working mainly in agriculture, are not exposed to education, mainly High School Education, thus, they may have access to online learning, any time, any place, any climate, with connectivity solutions through info centers and bilingual quality teachers. One possible solution could be to have info centers with excellent connectivity, open to the community without cost and especially dedicated to high school students. Another important point is to prepare native potential teachers through quality pedagogical programs, not only with technology knowledge but also with online experience and acquaintance with andragogy. A suggested list of online courses that could be prepared for teachers, with their descriptors, are presented at the end of the paper.

Keywords: Dropouts, Elearning, Vulnerability, Nationalities, Info-Centers, Deficiencies

1. Introduction

Education and culture are fundamental elements to achieve greater peace and development of our Latin American countries in all senses: human, social, economic, productive and technological. International educational research has shown that "each extra year of basic education strengthens a person's skills and abilities, which in turn increases their productivity and ability to generate income..." Thus, improving the quality and access to education constitute strategic goals for the country with important long-term social and economic impacts", even more so when Ecuador is one of the signatory countries of the World Declarations of Education for All¹ (Jomtien 1990, Thailand²) and continues to have

drawbacks in the education arena.

Despite this, we continue to note both qualitative and quantitative deficiencies at all educational levels. One of the results of this problem is the large number of young people and adults who cannot complete secondary education due to multiple social, economic, technological and personal reasons, and for whom a quality educational offer of a face-to-face or online compensatory type is restricted to private education and not always available in public schools [13].

In this context, the advancement of New Information and Communication Technologies (ICT) is opening up new possibilities for education. However, the profile of online study programs tends to be elitist due to several factors: on the one hand, educational programs that use state-of-the-art computer technology are generally carried out by private for-profit institutions or are aimed at the university and postgraduate level, with extremely high costs for the majority of the Latin American population.

¹ <https://www.humanium.org/en/world-declaration-on-education-for-all/>

² https://bice.org/app/uploads/2014/10/unesco_world_declaration_on_education_for_all_jomtien_thailand.pdf

Additionally, the use of the Internet towards an efficient online education is geared more towards personal communication activities than educational uses, and there are few personnel and educational institutions dedicated to serious research and application of ICTs for educational purposes.

This situation results in a growing digital divide, particularly for disadvantaged social groups. Therefore, developing quality virtual academic programs at affordable prices is essential, especially those aimed at sectors with limited economic resources, vulnerable and with less access to technology, such as our diverse nationalities and native indigenous people³.

This quality online modality of studies, economical and with scholarships, has been implemented by “Colegio Virtual Iberoamericano” (<https://cvi.edu.ec>) since 2004 through a private foundation and with UNESCO support; this project, working towards an education for all, will give the possibility of finishing basic and high school studies to those population sectors that have traditionally been neglected by the educational system for vulnerability reasons of distance, work, age, disability, economic or discrimination of any kind.

An increasing number of young people are forced to drop out of school also because they are absent from the country since migration reasons and are faced with environments where they have neither the right to claim for education nor the economic possibility of obtaining one. This situation is generating an increase in student dropout rates at all levels and will have immediate and future repercussions on the social and economic situation of emigrants by reducing the real capacities to have access to better jobs because of lack of education.

2. Supply and Demand Analysis

The World Bank report on poverty in Latin America mentions the following:

Latin America and the Caribbean suffer from the highest repetition and dropout rates in the world [18]. Half of the children who start the first year of education never finish the fourth year. Although Pandemic resulted in an increase of online universities [5], it also produced [16] a low academic achievement, both being the factors most associated with the probability of belonging to the poorest population sector: “Research evidence reveals a complex relationship between health and academic achievement. Studies that have been carried out show a significant correlation between academic performance and health problems such as mental illness, depression and anxiety, vision and oral health problems, asthma, teen pregnancy, malnutrition, obesity, chronic stress, unsafe sexual activity, unhealthy eating, physical inactivity, substance abuse, aggression and violence, promoting an

un-peaceful social community⁴” as living nowadays in Ecuador.

With “pandemic” (2020) 150.000 students deserted from school in Ecuador only, expecting to lose 90.000 during 2021⁵ and 31% of girls do not finish high school⁶. Another cause of desertion is lack of interest because the majority of public educational centers do not have motivating pedagogical methodologies. If we add to this statement that authoritarianism and psychological abuse towards students are a constant in thousands of our rural and urban schools, it is easy for us to understand the condition of intellectual poverty in the country and therefore another reason for the flow of Ecuadorian emigrants to more developed countries.

Concluding, in Ecuador, schoolchildren between the ages of 6 to 12 are approximately 1,639,528 and only 66.8% complete their primary studies; when reviewing the statistical data of secondary education, the figure changes substantially since, from a population of 1,556,383 between 12 and 18 years of age, only 22% complete secondary education, remaining outside the educational system 1,213,978 Ecuadorians. This alarming data confirms what was said above by the World Bank⁷, in relation to education and poverty levels in Latin America and Ecuador.

3. Environmental Impact Analysis

The environmental impact, in terms of the use of renewable and non-renewable natural resources, is null because the “Online Virtual Education System” project⁸, via the Internet, does not use elements that generate waste or debris.

The entire academic process, that is, the study resources used such as: guides, books, and other bibliographic material are stored on the above project Platform⁹ or Virtual Classroom via the Internet, avoiding the use of paper and the unnecessary generation of waste.

It is worth mentioning that another significant contribution of the Project [4] is the Degree Theses, conceived as Projects of Social Management, Cultural Tourism and Sustainable Development, aimed at the preservation of the ecosystem, the social environment and cultural management, strengthening elements of local cultures. Several of the theses have received funding from external entities.

4. Cultural Management

Implicit in the national educational system is a limited vision of what constitutes Cultural Management, which is expressed in the norms, practices and attitudes that regulate

3 Source: SIISE - MCDS 2008 Note: The Peoples and Nationalities correspond to the Awá, Chachi, Epera, Tsáchila, Ai Cofán, Secoya, Siona, Huaorani, Shiwiar, Zápara, Achuar, Shuar and Kichwa nationalities and the Manta-Huancavilca-Puná people.

⁴ <https://www.primicias.ec/noticias/sociedad/clases-abandono-desercion-escuelas-covid/>

⁵ <https://www.primicias.ec/noticias/sociedad/clases-abandono-desercion-escuelas-covid/>

⁶ <https://borgenproject.org/tag/girls-education-in-ecuador/>

⁷ https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global_POVEQ_ECU.pdf

⁸ <https://www.cvi.edu.ec/>

⁹ <https://moodle.org>

the relationships between the different sectors and cultures of society. Similarly, there is no clear vision of the role that culture may play in the processes of democratic cohesion in the country: that is, the importance of conserving the natural, material, immaterial heritage, identities and other cultural manifestations.

This vision is part of the traditional reductionist conception of culture that is limited to "disciplinary practices", as well as to a whole set of values that do not recognize identities, diversity and respect for "otherness". The canons of this type of traditional, unidirectional and exclusive cultural system are reproduced in the current educational system, homogenizing behaviour, indifferent to the many nationalities and different people that exist in the country.

The Ecuadorian teaching profession, especially in public education, has been losing the leadership space obtained in past decades, among other factors due to the decrease in resources allocated to education and the economic crisis that has not only hit the family economy of teachers, but has devalued their own practice. Lacking opportunities to train, develop their interest in knowledge and creative activity, they are unable to assume a critical position and be prone to change. Most teachers have not had the opportunity to appropriate culture as one of the key elements of the educational process, nor have they been provided with the necessary instruments to be able to do so.

On the other hand, the Ecuadorian state has not always assumed as a priority education and culture as a state policy capable of generating human capital: a strategic factor for the development of the country. Under these conditions, the knowledge gap (cultural, scientific and technological) becomes even larger, and the ability to accumulate cultural capital capable of competing in the context of globalization, more distant.

Certainly there have been several attempts that have involved the Civil Society to place the concern for education on the National Agenda through the "21st Century Education Consultation"¹⁰, later the generation of innovative spaces such as the "Social Contract for Education"¹¹ or the "Forum of Former Ministers of Education and Culture"¹², which have sought to draw the attention of the State and society as a whole to the importance of education and culture.

Added to this are the efforts made by the population itself aimed at raising the educational and cultural level of children and young people, in unfavorable circumstances: lack of previous cultural capital, lack of libraries with sound digital references, difficulties in financing the permanence of youth in the regular traditional school system.

Education and culture have become an important part of the concerns of public opinion, largely due to the increase in social, ethnic and gender demands that have allowed us to understand the role that it plays in the processes of formation of national identities and the construction of democracy.

However, there is not enough clarity on how education and culture can become part of public policies and educational processes, and even, what should really be understood by education and cultural processes in a contemporary society.

There has also been no concern to form a group of high-level experts capable of reflecting on these issues and designing policies in these fields. It is desired that the pressing political processes that Ecuador is experiencing and the new perspectives in this field be a fertile terrain to guide education and culture towards excellence.

Studies using a modality mediated by educational computer technology through Internet (e-Learning) that allow autonomous study, adaptable to the times and places available to students, anywhere, anytime, and under any climate conditions should be implemented widely. An online educational system with technological applications for teaching, personalized monitoring, and means of verification, control and evaluation of learning from a socio-critical constructivist pedagogical perspective, has to be present in every corner of the country by means of a technical distant education.

5. One More Element

What is and what is not the "online" mode of e-Learning? In general, online courses are digital educational events prepared with resources and activities that are normally incorporated into an online course management system, also called an "educational platform", to design interactive and cooperative activities between students and teachers within the system.

There are basically two types of platforms: LMS (Learning Managing System) for working with small groups of up to fifty participants, preferably fewer (25), and MOOCs (Massive Open Online Courses) which can operate with up to 100,000 learners, certainly with a different methodology. The resources used such as forums, tasks, collaborative study groups, videos, images, surveys, infographics, questionnaires, exams, among others, inside and outside the platform, are used to carry out activities leading to generate participatory discussions, develop case studies, carry out reflexive analysis in an exchange of methodological techniques to achieve an environment of "action-reflection-action".

It is desirable to train students to discover and develop knowledge, induced and facilitated by the teacher, through appropriate techniques, as opposed to covering memorized material. Important is the teacher's preparation and influence to motivate students through active activities and mainly formative evaluation processes [6], such as problem and project base learning [7, 8, 11] with inquiry activities [1, 9, 14]. The graphic line is also important because we want to motivate the learner with images, videos and other resources, without turning the module or course into a circus.

Finally, what is not an online modality? It definitely is not the traditional video classes through real-time video conferences, so widespread nowadays; these can be used to clarify concepts, address concerns, or office hours of students [2]; nor is it a repository of endless documents to read as I

¹⁰ <https://www.21c-learning.com/consulting/>

¹¹ <http://contratosocialecuador.org/images/publicaciones/cuadernos/6.pdf>

¹² <https://www.forumsec.org/2018/05/24/2018-forum-education-ministers-meeting-outcomes/>

observe in several university courses and even less a long series of video "talking heads". The educational virtual classroom has to be a body of "human" dedicated [10] professors [15, 12, 17].

Some e-Learning advantages:

- 1) Highly collaborative and interactive learning.
- 2) Use of emerging and advanced technologies.
- 3) Increased use of collaborative skills for learner-centered strategies.
- 4) Development of competencies for online learning.
- 5) Bridging the digital divide.
- 6) Learning with ICT tools.
- 7) Time management.
- 8) Tutor intervention at any time of the day, every day.
- 9) Constant feedback.
- 10) Encourages group work.

It is noted that "pandemic" exploded the use of educational platforms [3], thus to accomplish all the above mentioned in this paper, there is one more lacking element, that is, the instruction of university professors through a solid and quality series of forming courses; not one or two, I would suggest at least six of them to a maximum of twelve, suggested as follows:

Table 1. List of suggested courses.

Courses	Weeks	Hours
1. Distance Education	4	40
2. Group Processes for Online Communication	3	30
3. Instructional System Design	3	30
4. Distance services for the learner	2	20
5. Techniques for online learning (theory) (5. and 6. are offered simultaneously)	6	60
6. Techniques for online communication (laboratory)	6	60
7. Online evaluation strategies	3	30
8. Communication and distance learning technologies	2	20
9. An introductory adventure to HTML	3	30
10. Fundamentals of Statistics	4	40
11. Research Methodology	3	30
12. Individual evaluation project	4	40

Descriptors:

1. Distance Education, 4 weeks, collaborative.

Content: Virtual Classroom Practices for its operation. Basic concepts of distance learning. Shared tasks and self-assessments. Team building. Justification in debates. Student-centered context-teaching-learning processes. Constructivist philosophy, crucial for Distance Education. Conceptual framework for distance education, teaching and learning, including factors of quality, interaction, independence and learner-centered design.

Objective: At the end of the course the participant will be able to study and work efficiently and without difficulty on the Virtual Classroom platform prepared for a Distance Education learning environment, being able to work easily to any other online learning platform. In addition, he/she will have developed experiential and study knowledge (principles, concepts, philosophy) about Virtual Education from a real online laboratory, to be applied to his/her work situation and

professional context.

2. Group Processes for online Communication, 3 weeks, collaborative

Content: Interactive processes and effective methods of online group learning and communication in Internet/Web environments will be examined. Instructor-communicator and learner responsibilities, actual online group facilitation techniques will be covered. Interactive communication methods that involve participants in discussions and various collaborative communication activities (forum discussion, reading, case studies, research, etc.).

Objective: At the end of the course, the participant will be able to apply comparative criteria to select appropriate communication and group learning strategies such as discussion, debate, case analysis and collaborative projects, among others.

3. Instructional System Design, 3 weeks, collaborative

Content: To achieve quality and maintain learner motivation in distance learning courses it is necessary to invest a good deal of time in systemic instructional design, therefore, the course introduces the important concept of ISD (Instructional System Design), its key components and methodology, oriented to problem solving and its use in education and training.

Objective: At the end of the course the participant will be able to apply the ISD model used and the concepts studied to systemically develop quality e-learning modules in the teacher's area of expertise.

4. Distance Services for the Learner, 2 weeks, self-paced

Content: In distance education we always talk about "time" and "space", concepts that have specific technological connotations, which often lead us to forget who is the "center" of the whole learning process: the learner. Therefore, this course will address issues of cultural diversity, understanding and preparation, personal and meta-cognitive issues, and a variety of student support services, specifically developing the concept of virtual student support.

Objective: At the end of the course the participant will be able to describe what the objectives of their virtual academic programme are by identifying the learners and their needs and selecting the tools and resources that will support the learner's virtual learning.

5 & 6. Techniques for Online learning, 6+6 weeks, collaborative (6 Theory and 6 Laboratory)

Content: The teaching-learning processes for the virtual mode are very different from the face-to-face or video-conference or multimedia modes; therefore, it is necessary to design adequate material for this new "online" learning modality. The course will cover topics such as lesson planning, starting and closing an online class, formulating questions and processing the answers, using examples, teaching concepts and solving problems, among others.

Objective: At the end of the course the participant will be able to develop an online virtual lesson in the laboratory area, incorporating various collaborative, motivational and participatory communication techniques.

7. Online evaluation strategies, 3 weeks, collaborative

Content: Formative evaluation processes used to examine educational programs and student performance are studied. It describes evaluation models and presents six components for an optimal evaluation design. Through outlines and examples, you will learn how to plan a good evaluation and how to implement it in order to verify its effectiveness and improve course quality.

Objective: At the end of the course the participant will be able to plan and design effective evaluation and learning verification processes, including circular feedback. The participant will develop knowledge and understanding of evaluation processes, concepts, principles and models and will acquire practical skills in planning and designing evaluation programs.

8. Communication and Distance Learning Technologies, 2 weeks, collaborative

Content: The most modern, freely available Internet technology products for online work and support of distance learning (e.g. Macromedia FLASH, Real Media, etc.) will be examined. Distance Education makes use of various technologies to provide programs and courses. Some of these support multi-user work will be used, others do not, but it is essential to know how to use each of them in the right way and in the right context. Other technologies such as telephone, satellite, microwave, cable, fiber optics, print, television, radio, video and audio cassettes will also be compared with the Internet.

Objective: At the end of the course the participant will be able to select the most appropriate technology or combination of technologies for the successful achievement of the virtual course, based on a previous systemic instructional design of a learning module.

9. An introductory adventure to HTML, 3 weeks, collaborative

Content: Various tags for font size, bold, italics, sub and superscript, and coding for modifying text, HTML text recognition are studied.

Objective: The general purpose of this initial module is to introduce the participant to the basic concepts of HTML, tags for designing short WEB pages and additionally to practice with various HTML coding that will serve to identify areas of interest on the WEB and to make possible changes in certain Multi Media designs.

10. Fundamentals of Statistics, 4 weeks, collaborative

Content: Intervals: width, position, equality and inequality, classes, limits. Descriptive statistics: Averages. Arithmetic mean, class-grouped and ungrouped data. Geometric mean. Harmonic mean. Similarities and differences. Median. Mode. Dispersion of a distribution Amplitude Mean, standard and semi-quartile deviation. Symmetric distributions, Variance Interpretation of values. Moments. Skewness, Kurtosis.

Objective: At the end of the online course the participant will be able to apply the concepts of descriptive statistics to simple problems in research education and to educational and learning projects.

11. Research Methodology, 3 weeks, collaborative

Content: Introduction. Hypotheses formulation. Outline, types and stages of research. Exploratory, descriptive and explanatory research. Statistics and measurement. Confirmatory and robustness tests. The report.

Objective: At the end of the course the student will be able to apply the statistical measurements studied to their work and specifically to their course evaluation process.

12. Final Project

(a). Individual evaluative project, 4 weeks, tutorial

Content: The purpose of this project is to compare various (at least two) online course management system platforms and parameterizing the results.

Objective: At the end of the course the participant will have acquired the knowledge to evaluate virtual classroom management platforms, applying various evaluation criteria and designing short online events on the various web platform learning systems studied.

(b). Applied project, 4 weeks, tutorial

Content: This final assignment stipulates the development of a complete online virtual course by the participant. The course must be implemented on a selected educational online course management platform (virtual classrooms).

Objective: At the end of the course the student will have designed and implemented a course of at least two lessons in a virtual classroom, using the educational online learning platform selected with the teacher and the resources and techniques acquired during the training in virtual pedagogy.

6. Conclusion

As a brief conclusion we would wish to emphasize that a solution to the mentioned principal dropout problem from school in Ecuador, the Region and other countries suffering the same situation, will be the implementation of online schools, besides preparing excellent teachers for this modality, with several well designed technical online courses, as mentioned. Also the evaluation methods have to be improved moving towards more formative models with a respectful and human online environment.

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