

Restoring the Cuban Education System

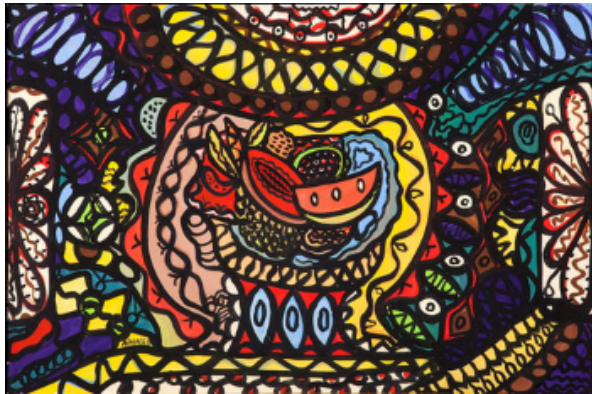
Evolution of the Information Communication Technology in Education: Challenges, Growth, and Future

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Introduction



Peláez, A. *Bodegon* (1958) Retrieved from: <https://www.elcopoylarueca.com/ornamento-naturaleza-muerta-la-pintura-amelia-pelaez-robert-altmann/>

Cuba is one of those countries which its culture is diverse, complex, and fascinating. With many influences through its story European, African, Asian, and American, a very particular nationality has been shaped. Cuba is not only a beautiful island, which captivates foreign with its traditions and controversial history but a place where its locals are still warm and hospitable despite the economic crises that have suffered. Throughout the years this country has reached a tremendous cultural development, lavish in artistic manifestations and creators. It has in its collection essential names of writers, thinkers, dancers, musicians, painters, poets, and singers recognized in the world such as Jose Marti (Writer), Celia Cruz (Singer), Alicia Alonzo (Ballet Dancer), Emilio Estefan (Music Producer), and Amelia Peláez (Painter) among many others.

Cuba is also portrayed by its humanistic help around the world using its health system as a model to aid other countries in need where more than forty countries from Latin America, Africa, and some in Asia have been benefiting from it. Nelson Mandela stated that Cuba never went to Africa as a conqueror (Flores, F. 2016), but as aid to pro-independence movements

and later, on in a massive exportation of doctors to support health literacy and assistance to eliminate many sicknesses, and to restore sight to more than 80 thousand of people without resources (Flores, F., 2016.)

Cuba development as a country is characterized by the distinctive productions of two opposite worlds, before and after the Revolution. Before the Revolution Cuba was dominated by the United States which used this land primarily as the island of sin, immersed in the corruptions of gambling, mafia, and prostitution (Havana Times, 2015.) After the Revolution in 1959, the economy, health, and education were the primary focus of reconstruction. The revolutionary movement made significant changes in reestablishing and making accessible basic needs for the population, preparing and spreading through the country many young teachers to educate children and adults, and improved the health system dramatically to make it free and accessible for all (Iturralde, A., 2017).

Despite all positive changes, with the collapse of the socialist system in Russia, Cuba fell into a deep economic crisis from where it has not recovered yet. This fact kept the continuation of the development of the country in an underdeveloped stage for too long already. The educational system has a dramatic involution as a result, from where the state wants to recover by making changes in the education system policies and infrastructure to open doors to new and proven methods.

This book chapter aims to highlight Cuba's education technology ideologies influences in its population, its continues strives to change toward the advancement of the current information systems to match real influences around the world, and how the country is developing toward its goals.

Context:

Cuba was conquered in 1492 by Christophe Columbus and colonized by Spain for over four-hundred years. In the late 1800s, the United States claimed Cuba during the Spanish-American war and gained power over the land under the dictator Fulgencio Batista. The United States dominated the country until 1959 when Fidel Castro preceded and won the revolution and later on declared Cuba as a socialist state in 1961. Fidel Castro rebuilt the nation and dictated following a Marxist-Leninist model until 2008, giving his full power to his brother Raul Castro to continue governing the island (Insight Cuba, 2000-2018.)

The Republic of Cuba is the biggest island of the Antilles with a 42, 426 sq. Miles. It is located in the Caribbean where the Caribbean Sea, the Gulf of Mexico, and the Atlantic sea meet (Cuba Profile Facts, 2015). Cuba counts with approximately 11.3 Million people which is equivalent to the 0.15% of the world population (Worldometers, 2018). Cuba's population growth rate has decreased dramatically to a -0.29% (Fernandez, A. and Pentón, M., 2016) that compared to other countries in the world, and it makes the 217th place out of 234 in total (CIA, 2018.) Its people are very diverse since there is a blend of races from Cuban's Native Indians, Europe (Spain and France), Africa, and China (Insight Cuba, 2000-2018.) Cuba's population live in mostly urban areas since there are more accommodates and free access to education (Insight Cuba, 2000-2018.) The country has currently developed some intensive to increase population in the rural areas by offering free land to families that would like to work in farms to provide for themselves and potentially grow a family business (Insight Cuba, 2000-2018.) Cuba's economy was much affected by two significant problems: the collapse of the socialist system in the URSS where the sugar and tobacco trade, the primary sustention to Cuba's economy, was completely closed, and the US Embargo that prevented countries to engage in commercialization with the island (Cuba Study Group, 2010.). The economic crisis, from where it has not yet recovered, placed Cuba in a situation where the basic human need was not meet making the living situation very complicated. Shelter for Cuban citizen is still extremely difficult due to the lack of provisions to maintain houses and build new ones, and the socialist policies ideologies that do not grant permission to buy land to build homes or apartments to live in (Iturralde, A. 2017.) Workers' salary fails to cover basic family needs and have access to essential food; therefore, there is a gradual deterioration of the labor force that consequently affects the economy as well

(Iturralde, A. 2017). At the lower level, a high percentage of the families' and the country sustainability is thanks to remittances sent from the families living in the United States to Cuba. According to the US Department of State, the remittances reach up to nearly two billion of US dollars since 2000 (Gittleson, K., 2014.) However, At the upper level, one of the significant economy sustainability sources comes from the sale of professional services, mainly medical. This sale of service reaches “an estimated 11.543 billion dollars as an annual average between 2011 and 2015 (RFI, 2017.)” These medical services are provided to more than sixty countries such as Venezuela, Brazil, Qatar, Kuwait, China, Argelia, Saudi Arabia, South Africa, Haiti, Bolivia, El Salvador, Guatemala, Nicaragua, Honduras, Ethiopia, Congo, Tanzania, Zimbabwe among others (RFI, 2017.) Therefore, in many ways, the government has gradually updated its economic model to benefit its population by improving investment laws and opening the doors to another no so rigid possibilities. In one way, closing many state jobs and letting people to open their own business, allowing local farmers to sell goods directly to hotels, and allowing Cubans to buy electro-domestics, and openly tour the country and stay in hotels, have had a definite step up in modifying the people living conditions and motivations toward a change (CIA, 2018). After nearly sixty years of revolution, Cuba regimen defines itself as a representative democracy without political parties (Notimerica, 2017). With the change of the president, the government is announcing changes by having fewer deputies and Chamber of Representatives, a multi-party-political system, and is aspiring to professionalize the work of the deputies (Gonzalez L., 2017). As of now, there is only one political party in Cuba. Although, Cubans have a voting system among the delegates of the only political formation that exists. The elections in Cuba are held every five years, they are free, and they do not postulate civic organizations.

Education

As I pointed out before, the education in Cuba raised up later after the revolution, when Fidel initiated the new educational movement with the aim of providing literacy to all Cubans. Children and adults in remote rural areas were targeted as the first ones to be taught the arts or reading and writing. As Fidel used to say, “Ignorance kills people; therefore, it is necessary to kill ignorance (José Martí.)” However, the education in Cuba had its beginning in the Spanish colonial era where private institutions were created to educate Creoles and Spaniards (Torres, R. 1999.) During that time two important universities were built in the capital, the University of

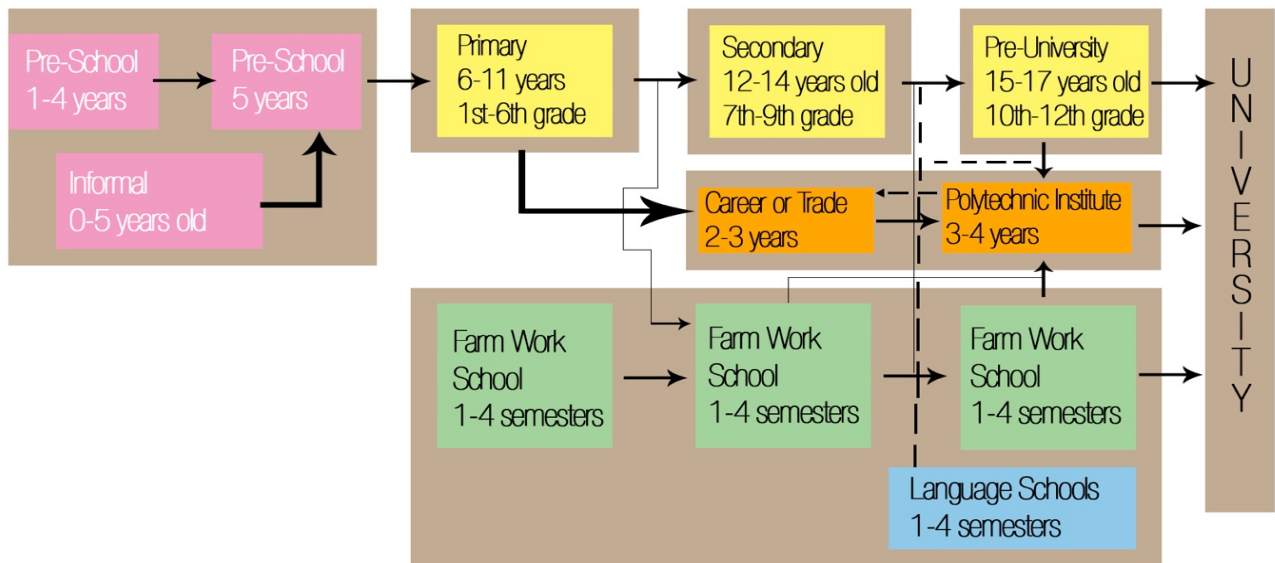
Havana, 1728 called “Real y Pontificia Universidad de San Jerónimo” and the “Seminario de San Carlos y San Ambrosio”, in 1769 which was created to prepare the young man to become church leaders (Torres, R. 1999.) Many more private colleges were built through the country with the emphasis in primary and elementary education, and at some point, they were focusing on the ideas of freedom, love for their nation, and ways of obtaining independencies (Torres, R. 1999.) After the war of independency Spanish-United States, the population was devastated and the education systems that was growing suffered a terrible recoil were illiteracy high-rocked the 64% of the population (Torres, R. 1999.) The new system soon implemented ways in which the country could be recovered from the overwhelmed tragedy by opening public schools and hiring people that could start teaching the primary and secondary schools with a minimum of preparation while new teachers could complete formal studies to carry on a better educational system (Torres, R. 1999.)

Unfortunately, the organization already in place that was giving excellent results started to breakdown due to the corruption and inappropriate decision-making that deviated the allocated money toward education to official’s pockets (Torres, R. 1999.) Universities did not suffer much at first, but later were used as a target for infiltrated revolutionary ideals by Fidel Castro, at that moment a Law student with high honors (Torres, R. 1999.) During the next few years, the undercover revolutionary activism of students in the university oh Habana grew considerable creating an empowering atmosphere toward the liberation from an oppressive and abusive regimen (Torres, R. 1999.) The end of it unfolded in the beginnings of the second Cuban revolution for total independence, where the education system played a fundamental role in opening the students and professors’ eyes to freedom and facilitating knowledge needed to defend those freedom ideologies (Torres, R. 1999.) It was a crude fight where many students lost their lives and were severely punished for obtaining information about the revolutionary activities by the government officials (Torres, R. 1999.). In the end, Fidel Castro took over the power and Cuba educational system was one of the first reforms in the list to be accomplished and he did.

Over the years, Cuba has dedicated a significant amount of its budget toward education. Contrary to its beginnings, Cuba’s literacy rate has reached its 99.8% of its total population since 1959. Cuba educational model is free from pre-school to university education. Its model combines general and specialized knowledge to achieve the objectives of a scientific, technical

or artistic nature with work, research, political, social, physical and military preparation (Laguna, J. and Sánchez, A., 2015.) Pre-school is usually sheltered in full-day day-care centers around the country entirely free and accessible to all children. Elementary schools start at the age of five and run until six grades. It is followed by secondary education from 7th to 9th grades and continues into either vocational upper-secondary education or pre-university preparation. Both cases can potentially conduct students into higher education.

Cruz, G. (2017). *Cuba's educational systems since 1970*. Retrieved from: <https://www.questar.org/2017/04/28/look-cuba-education-system/>



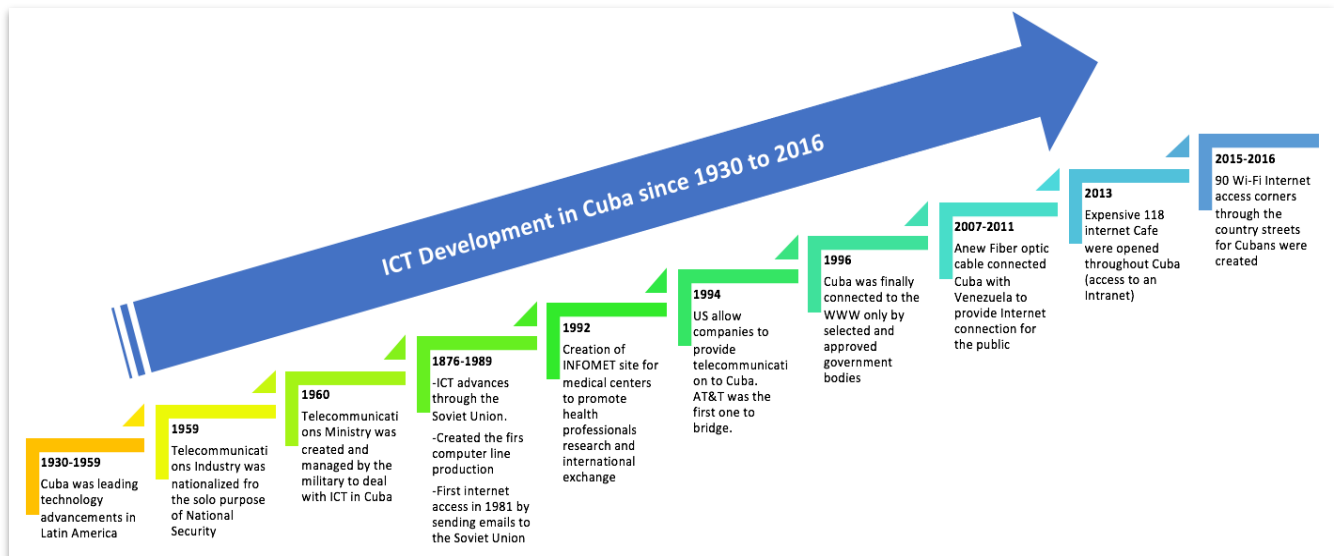
The situation of the Cuba education system is uncertain. The country is currently undergoing a shift, and there are many teachers are exiting the educational field to others where they can guarantee basic needs for their families (Cruz, G., 2017.) There is more emphasis in trade schools/vocational school than pre-universities on ensuring more workers in those field than students entering in higher education (Cruz, G., 2017.) Ultimately, the government wants to continue preserving the educational system that has conquered, therefore plans to address many of the current needs to keep high-expectations and educational quality is taking place Laguna, J., and Sánchez, A., 2015.)

Educational Technology in Cuba

In contrast to other countries, Technology advantages have not been part of its educational growth and success. For a long time, Cuba has been one of the most resistant regimens against information and communication technologies advancements according to Freedom House publication (2015). Only a small sector that constitutes the government and health system, of the Cuban society have had consistent access to the internet for executive functioning and health research in the past 50 years. Even though technology has not been part of the growth of the education system, there is no way nor have any sense anymore to continue resisting to the advancements of ICT in the world. Thus, many changes have slowly taken place toward penetration of ICT in the Caribbean Island (Delafe, K. (2018.))

The following chart shows a timeline of ICT development in Cuba as a visual guide.

Cuba is just getting started with insufficient Internet access for its population in the current years. It is the hope that changes in the implementation of technology can be made to integrate the country into the fast-growing technology-assisted education. At this point,



Delafe, K. (2018). *Information to create this chart was retrieved from the ICT4Cuba project, Columbia University, 2016.* <https://ict4cuba.wikischolars.columbia.edu/Project+Overview>

technology is still regulated, and none of the services are free for the population, but schools are being slowly connected to provide students the opportunity to improve their knowledge by being able to research for information online (Delafe, K., 2018.) The low monetary income from work is not enough to cover basic human needs nor is to include the high prices of internet and telecommunication services. So, accessibility is limited for the Cuban population (Freedom

House, 2015). Therefore, the provision of a technology-supportive learning environment at home is complicated. National educational technology standards and reforms have experienced changes in the last decade. The Information and Communication Technologies Policies about internet access and connectivity remain controlled. However, the school system implemented and adopted Television Assisted Instruction (TAI) in all levels of the educational system and Computer Assisted Instruction (CAI) (not connected to the Internet) in primary and secondary instructions (UNESCO, 2012) as significant reforms and intention of using ICT in the classrooms. At this point, it seems that teachers continue favoring the teacher-center teaching style and are resistant to the use of technology in the school, so the use of equipment in the elementary and secondary classroom is not as frequent as before (Diudé, A., 2017.) By contrast, TAI and CAI are used continuously in pre-universities, vocational schools, and higher education due to the deficit of teachers. Moreover, in replacement of the full connection to the internet, a national intranet project has been built to provide access to classified information to schools and the computer clubs that have been installed in cities. (Guerrero, L. (2017.) 15% of the education institutions are currently connected to the national Intranet and it is being used for students to exchange information, save documents, and access to instructional modules (Guerrero, L. (2017.) Another important project has been the acquisition of 27 technological classrooms to provide teachers with needed preparation to integrate technology in their teachings (Radio Reloj, 2018.) These classrooms are equipped with an electronic board, a changing cart with twenty tablets, a laptop computer for the teacher, and software and connectivity to the intranet to allow different ways of technology interaction as individuals and as groups (Radio Reloj, 2018.)

The current situation of the educational technology in Cuba is still behind compared to other countries in Latin America and the world, but it is making an effort to be improved as much as the economy and educational systems allow. As of now, schools are equipped with computers and TVs, students have access to computers with no internet for 1 hour per week for specific purposes and under teachers' surveillance, "TV Classes" continue being the priority in many of the subjects, Internet accessibility is extremely limited, and teachers' technology competencies are low (Diudé, A., 2017.)

The Cuba government has always been very proud of the educational system that it was able to create and maintain for so long. I believe that it will try to continue holding that label. Furthermore, from digging deep into the educational technology in Cuba, I could affirm that all

changes are pointing to the continuing development of a better and unique infrastructure to provide the technology that Cuba needs to compete with the technological standard that the world is using as part of its educational framework. It obviously has its strengths and challenges. One of the strengths is the desire that the population has for a change and that change is taking place even though the government is not providing it. An example of it is the number of Cubans that pay for internet access to connect with families in other countries, maintain a Facebook account, and email back and forth with families and friends. El Nuevo Herald Online Newspaper published in September of 2017 that Cuba registered more than 4.5 millions of users on the internet in 2016 this is about 13% increase of internet access since Wi-Fi stations started to be connected around the country in 2015. A positive change that correlates with the growth of connectivity is the increase of Wi-Fi hotspot access, the investment on DLS technology that allows systems to perform better and have and more connectivity, country's regulations are being loosened compared to the beginnings, and the technology infrastructure has been changed dramatically (Sepulveda, D., 2016).

As far as weakness and improvements go, it will be excellent to continue improving the infrastructure to provides better connectivity, connect more Wi-Fi routers, reduce cost of the hourly internet connection (having in mind that internet currently cost the 10% of a regular Cuban salary), invest in teacher professional development, improve the population and student's technology literary, and redesigned policies to advocate for more technology inclusion in the education system (Sepulveda, D., 2016).

Educational Technology Resources:

Key people in educational technology

No specific data has been found about key people in education technology.

Key organizations and associations

The following organizations seems to be the most important in the development of the ICT and ICT in education.

Ministerio de la Informática y las Comunicaciones: <http://www.mincom.gob.cu/node/353>

Ministerio de Colaboración Económica: <http://www.minrex.gob.cu/es/mincex>

Ministerio de Comercio Exterior y la Inversión Extranjera:

<http://www.minrex.gob.cu/es/ministro-de-comercio-externo-e-inversion-extranjera>

SOFTEL: <http://www.softel.cu/portal/index>

DESOFTE: <http://www.geicuba.com/en/desoft>

SEGURMATICA: <http://segurmatica.cubava.cu/>
COPEXTEL: <http://www.mincom.gob.cu/node/381>
ETECSA: <http://www.etcasa.cu/>
RADIOCUBA: <http://www.radiosdecuba.com/>
CITMATEL: <http://www.citmatel.cu/>

Ed Technology/IT programs at universities

This list refers to the universities that are totally involved in the education technology.

Instituto Politécnico José Antonio Echeverría: <http://cujae.edu.cu/en/>

Universidad de la Habana: <http://www.uh.cu/>

Universidad de las Ciencias Informáticas: <https://www.uci.cu/>

Centro de Cibernética y Matemática Aplicada: <http://www.icimaf.cu/>

International organizations or projects

The UNESCO is an international organization dedicated to maintaining, aid, and support educational systems and projects around the world. It also provides actual data of the results of those projects. UNESCO is currently very involved in the development of ICT in the Cuban education.

UNESCO: <http://uis.unesco.org/country/CU>

Since the presidents Raul Castro and Barrack Obama met in Cuba, the embargo policies toward the Cuban nation have been updated allowing investors to explore and invest in the business in Cuba. Google, in this case, signed a contract to provide different resources to improve ICT development in Cuba. Here is a page that provides an overview of this project. Google: <https://www.usatoday.com/story/news/world/2016/12/12/google-cuba-sign-deal-speed-up-internet-service/95337148/>

Factors to be considered when working in this country

Since Cuba is a closed communist country, it is important to understand its roots and the development of the country educational system and have an idea of the development and structure of the country as a whole. Knowing the hierarchy of the government institutions can aid to navigate the system without too much effort. As an IDD&E professional, factors such as meeting key government official that is involved in policies, strategies, and funding will be crucial to get them to understand the purpose of a given project. This will open doors to all of the other interested parties and information with a limited of freedom. Knowing essential professional in the education system that can provide information and help and have access to locals such as teachers, students, and parents will also be fundamental to the success of any given project. Besides, it will be vital to understand and distinguish the country and people limitations

and strength with regards to ICT. And lastly, what resources will be available to aid the process of the projects and what documentation will need to be provided before, during, and after.

Conclusions

During the research to provide information for this book chapter about the development of ICT in the Cuban education, I have found that the influences of the history of the Cuban education are still present in today's progress. Cuba had been marked by the multiple processes in which the education development failed to provide a sustained education for its locals before the revolution, giving this a strong support for creating the best possible education system with limited resources after the revolution. Regardless of the different attempts to block the ongoing development of the educational system, the fall of the socialist regime in Russia and the US embargo, Cuba has remained active in supporting its education with even fewer resources and continue striving for the best. All these have been provided a strong step-stone in the educational system and the understanding of Cubans' need for integrating education with the advancements of the information and communication technologies. Cuba is taking reasonable steps to procure the support of Cuba's education development and integration with the ICT. They know it is a need to support and develop their education, but at the same time, they are taking the time to understand how and what is important for their people concerning education. Many changes need to take place to succeed in their ICT and education integration; policies, economy, cultural, motivation, and teacher's preparation, but they are in the way.

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