

Memorandum

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TO: Latin America and the Caribbean (LAC) Programme of UNIDO

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SUBJECT: Essay competition about the industrialization challenges of the LAC region in achieving the Sustainable Development Goal 9 and an Inclusive and Sustainable Industrial Development (ISID)

Here is the essay developed for the UNIDO Essay Competition. It relates about the role of education in industrialization, sustainability and development in Latin America and the Caribbean. This essay gives recommendations for increasing the investment in high quality level education in order to obtain skilled professionals that could create new technologies and new effective initiatives. It incorporates secondary research.

Although the rate of investment made by Latin America and the Caribbean is positive in the past years, the information gathered shows that it is not enough to provide high-level skilled professionals. With the participation of all sectors of society, mainly the private sector, in upgrading the educational system, the region should be able to increase its industrial and sustainable performance. Recommendations for improving the quality of education include the establishment of more inclusive partnerships between all sectors of society; the expansion of access to information through computers and exchanges programs; the analyzes in how to maintain students at school; the promotion of extracurricular activities; and the possibility in expanding the time that the students spend at school per day.

I am grateful to UNIDO for this opportunity and please contact me if you like additional information. I would be happy to implement some of the recommendations in this report by developing promotional materials for LAC Programme of UNIDO.

**THE ROLE OF EDUCATION IN INDUSTRIALIZATION, SUSTAINABILITY
AND DEVELOPMENT IN LATIN AMERICA AND THE CARIBBEAN**

Presented to:

Latin America and the Caribbean (LAC) Programme of UNIDO

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Executive Summary

Purpose and method of this essay

Latin America and the Caribbean presents in its history different attempts of industrialization. After World War II, Latin America established a new strategy of development known as Import Substitution Industrialization (ISI). This model still is frequently compared with East Asian Export-Oriented Industrialization. Thus, the purposes of this essay are:

- Compare the two economic models developed in Latin America and East Asia in the last century.
- Present the importance of education in developing the industrial and sustainable initiatives in Latin America and the Caribbean
- Approach the link between education and the ISID and SDG 9
- Recommend ways to increase the investment on education and obtain high-level skilled labor.

Findings and conclusions

Most articles and reports recognized the positive impact of education in economic growth. Education was one of the factors that guaranteed the success of EOI model. However, Latin America and Caribbean still presents low level of growth in this area. This affects negatively the student performance at school, at university and later on at labor market.

In this manner, the results of this essay show that other sectors of society struggles due the low quality of skilled labor in the region. This makes them search for new alternatives in order to obtain high-level skilled professionals. Through education, the region should achieve its potential by having skilled professionals able to create and develop new and sustainable technologies.

Lastly, education is the key piece in achieving ISID and SDG Goal 9.

Recommendations for increasing the investment on education and obtain high-level skilled labor.

Recommendations for increasing the investment on education includes:

- Latin America must invest more in secondary and tertiary education.
- The establishment of partnerships is essential and must include all sectors of society.
- Each country must decide how to improve the quality of education. However, some alternatives this essay recommends are:
 - ✓ The donation of computers to schools and the promotion of exchanges in order to promote knowledge exchange.
 - ✓ Students and professionals must participate in extracurricular activities that promote sustainability and inclusiveness and that challenge their potential in order to become high-level skilled professionals.
 - ✓ An important task is to analyze how to maintain these students at school. Thus, a deeper study must be made in order to evaluate the situation.
 - ✓ All countries must analyze the possibility of expanding the time that the students spend at school per day since it influences directly in their performances.

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Introduction

Latin America and the Caribbean is a rich region. All of its countries exhibit in their history moments of hope, survival, overcoming and conquest. It is undeniable that the region has been and still is an important actor in world's dynamic. In crisis, the world turns to Latin America and the Caribbean and expects to see new possibilities since the region is a model of overcoming. However, Latin America and the Caribbean has been a scenario of repeatedly unsuccessful efforts too.

Through its history, there were many attempts of industrialization but mostly in the Post-World War II, when the region searched for a new path of development since their former attempts yielded no satisfying results. Besides, with the population growth and the appearance of new demands from urban population, it was necessary to find new and effective ways to increase the economy. Thus, the region opted for a policy of Import Substitution Industrialization, known as ISI.

In the other side of the globe, East Asia also sought to develop itself in this period and choose a different economic strategy, the Export-Oriented Industrialization, known as EOI. The critics approaches many aspects that could have affected negatively and possibly could be the reason why ISI model failed, such as agrarian reform; much agricultural policies; the heavy debts due the oil crisis in the 70's. This essay focus on one factor that became fundamental to all EOI strategy success: Education. The high-level investment made by East Asian countries allowed their individuals to reach their potentials and provided the creation of a well-constituted active group of specialized professionals.

Moreover, Latin America and the Caribbean presents different realities because each country has its particularities. Then, speaking about the region without specifying the structure and historical differences inside it constitutes a mistake of dangerous consequences (CARDOSO; FALETTO, 2004, p. 14-15). This way, this study approaches the industrialization period of Latin America in the 20th century, post-World War II. In addition, this paper aims to compare the Latin America and the Caribbean and East Asia regions and to present the important role of education as a fundamental aspect in the development of both regions, mainly in their industrialization. Finally, this essay seeks to show how education could affect in achieving ISID (Inclusive and Sustainable Industrial Development) and SDG (Sustainable Development Goal) 9.

Industrialization in Latin America and East Asia

After World War II, the world faced a moment of redefinition. It was clear that continuing with the same actions would only create roots for another war. Therefore, many international organizations, like United Nations, became an important environment to discuss how to maintain peace and security in the world. Moreover, the bipolarization made countries question the global order and their own role in the world's dynamics. In Latin America, the appearance of new classes and the development of industrial sectors guaranteed their autonomy before the great powers.

During the 50's and 60's, underdeveloped and developing countries sought to develop themselves in order to compete economically with the great powers and to overcome poverty and misery. In this manner, each region followed different economic strategies. Latin America, dissatisfied with the results of your traditional international specialization based on exporting a small number of primary goods, began a process of economic growth and transformation turned inward (BAER; GOLDBERG, 1984, p. 124). This process, known as Import Substitution Industrialization (ISI), consisted on the establishment and protection of domestic infant industries and the production of facilities so they could emerge to compete with imported goods and make the local economy more self-sufficient. East Asia, especially the NICs (new industrializing countries), choose the Export-Oriented Industrialization (EOI) in which was based on developing national exporting platforms to compete with foreign goods. Thus, the EOI model consisted on the concentration of stimulus to domestic and foreign investment in sectors in which the country had comparative advantages and would have more chances to become internationally competitive (PIO, 2002, p. 153).

Both strategies presented different but important steps to achieve great results in each region. However, many critics claimed that the EOI model was the right model to be followed and that was the reason why Latin America did not develop as much as the NICs. Others critics approaches many aspects that could had affected negatively and possibly be the reason why ISI model failed, such as agrarian reform; much agricultural policies; the heavy debts due the oil crisis in the 70's (KAY, 2002, p. 1073-1075). Many had affirmed that it was an inefficient way of using resources to accelerate growth. Nevertheless, as we can see, there is no right model in Economics. All economic activities have good and bad impacts on society eventually. The real factor that this study approaches is what East Asia did that Latin America did not do in that period: NICs invested massively in Education. The investment in education allowed the East Asian countries to obtain skilled labor and to develop new technologies capable of supplying its economic model, while Latin America only started to concern with it in the 90's.

Education in Latin America and the Caribbean

It is a truth universally acknowledged that education brings opportunities to people. Education creates new possibilities and allows the individual to reach all his potential, which is an important factor to any country. Investing in a citizen education means investing in the future of the world. However, the link between education and economic growth is still unclear since there is no consensus in many topics, such as *what kind of education contributes to growth* and *what level of education contributes most to growth*. Still, many new growth theories assert that developing nations have a better chance of catching up with more advanced economies when they have a stock of labor with the necessary skills to develop new technologies themselves or to adopt and use foreign technology (World Bank, 2008).

In this way, East Asia realized that through education it could reach a major level of development in its exported oriented industrialization model. On the other hand, Latin America has concluded only in the past decades that investing in public primary and secondary education was a high priority. The main goal became providing universal access to education, what happened only in the late 90's, when most countries had succeeded in enrolling almost all their children in primary school. When the region achieved the goal, the new task was to offer a better quality of education. However, policy makers in Latin America could not find common standards in how to improve its educational system – investments in putting computers in school; establishment of more hours that a student spends at school per day; growth of school services; investments on teacher's formation.

As researches show, each of these factors influences in the students' performance and later on, in their careers and in the future of the country. Compared to OECD, Latin America presents a poor reality of just over 5 hours per day that a student stays at school. In Asian countries, the reality is completely different, where the students have class almost 10 hours per day, according to UN Economic Commission for Latin America and the Caribbean (ECLAC). In total, in OECD countries, the school life expectancy is over 15 years, sometimes reaching 20 years, while in Latin America it reaches 14 years in the best scenario (OECD Statistics, 2013).

Moreover, the general trend for public spending on education in the past decade was positive, but still low in Latin American and the Caribbean countries. According to UNESCO 2015 Regional Review, from 2000 to 2013, there has been an increase of 0.6% by percentage of GDP and this expenditure is assigned to expand education services instead of actual investments in order to create and improve educational programs. Also the average proportion of public spending per pupil tend to remain the same or increase slightly in primary and secondary since these levels are the high priority, while falling significantly in tertiary education.

Lastly, according to Economist Intelligence Unit (2008), 93% of Latin American children begin primary school, but only 62% continue to junior and high school. The rate of graduates is even lower. Nearly one-third of children in primary school repeat a year. This situation creates negative impacts on the educational system, which also affects the student's achievements. Thus, it is important to invest in primary school, but it is fundamental that the country establishes new mechanisms that allow the student to remain at school and develop his potential. Furthermore, it is necessary to increase the investment in secondary and tertiary education in order to have capable active professionals that could transform the countries' poor reality into a better and prospective perspective through studies and work.

Education and Inclusive and Sustainable Industrial Development (ISID)

The UNIDO Inclusive and Sustainable Industrial Development Global Campaign highlights the role of industrialization as a driver for development and that sustainable initiatives creates new opportunities to society while reduces the excessive natural resource use and negative environmental impacts. The campaign also confirms the provisions of the Lima Declaration (2013), which settled standards towards inclusive and sustainable industrial development. According to the second paragraph of the Declaration, the underlying principles of it are:

“Industrialization is a driver of development. Industry increases productivity, job creation and generates income, thereby contributing to poverty eradication and addressing other development goals, as well as providing opportunities for social inclusion, including gender equality, empowering women and girls and creating decent employment for the youth. As industry develops, it drives an increase of value addition and enhances the application of science, technology and innovation, therefore encouraging greater investment in skills and education, and thus providing the resources to meet broader, inclusive and sustainable development objectives.”
(Lima Declaration, 15th Session of UNIDO General Conference, Peru, 2013)

In the Declaration's perspective, industrialization has a decisive impact on education due the investment in innovation and skills. This in fact happens. The performance of the industrial sector affects the educational system since it is one of the responsible in finding new technologies and creating new studies fields. However, the line of thought does not start from industrialization, as it specifies. It starts from education. The industrialization in Latin America and the Caribbean presents challenges due the low quality of education provided by the Governments to their citizens. Professionals with high-quality education compose industry and through their efforts it is possible the creation of new technologies and new achievements every day. Therefore, education constitutes an important piece in industrial sector.

Many industrialists confirmed this prerogative and the private sector started to put together hands-on partnerships with the public sector in Latin America and The Caribbean. According to the Economist

Intelligence Unit (2008), this is a response to the skills deficit and these groups lay out the results that they expect from state education in terms of access and quality of student learning. In Colombia, there is *Escuela Nova* (New School), a program that receives help from the private sector and that improved the quality of education in rural schools across the region. In Guatemala, public and private sectors established partnerships in order to bring computers to schools. In Mexico, private sector makes donations through philanthropic foundations to schools. Two examples of foundations that seek the development of education in the country are *Empresarios por la Educación Básica* (Industrialists for Basic Education), program that lobbies for the establishment of standards, what children should learn and how they should learn, and *Mexicanos Primero* (Mexicans First), foundation that also aims to improve the quality of basic education.

Thus, as ISID likewise defends, the process of industrialization must be inclusive, where “all countries and all peoples, as well as the private sector, civil society organizations, multinational development institutions, and all parts of the UN system is included” (2013). This confirms that the situation will only change when all parties participate in encouraging the development of a high-level educational system in the region. The establishment of new and innovative partnerships between all these sectors of society would allow the improvement of the educational quality. Thereby, this investment will affect directly in the students’ performance and consequently in the country’s potential to create new technologies and new enterprises, resulting in new jobs and in the raise of gross domestic product due economic growth.

Education and Sustainable Development Goal 9: Industry, Innovation and Infrastructure

The Sustainable Development Goal 9 highlights the importance of building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation. As it is perceived, education influences all these factors. By investing in individuals’ educational formation, countries obtain skilled labor and develop its infrastructure. In Latin America and the Caribbean, this is particularly an important key piece in its industrialization since the region lacks well-constituted infrastructure. Through the increment of these skilled professionals and the infrastructure, more enterprises would invest in the region and possibly establish more partnerships in order to develop more potential endeavors inside it. This could also increase the access of small-scale industrial and other enterprises to financial services and their integration into value chains and markets, one of the SDG principles, because the enterprises would have skilled labor and capability to overcome adversities and challenges.

Moreover, another aspect extremely important is the access to information and communications technology. The improvement of the infrastructure is fundamental in allowing more students and professionals access the internet and have a wider range of information exchange with other students and other professionals from different countries. This exchange constitutes a relevant tool for skilled professionals, because it would support domestic technology development, research and innovation and would result in new researches that could influence infrastructure, educational system, industrial sector, sustainable initiatives. This is why the academic environment means so much in achieving great goals as those established by ISID and SDG. Thus, it is fundamental that the Government and others sectors of society establishes partnerships in order to develop the tertiary education since University is where the student trains and prepares for the labor market.

Still, none of these objectives is possible to achieve without the creation of sustainable initiatives. According to UN Development Programme's Human Development Report, sustainability calls for a decent standard of living for everyone today without compromising the needs of future generations and is inextricably linked to basic questions of equity as fairness, social justice and greater access to a better quality of life (2011). Latin America and the Caribbean, home to some of the world's most pristine and diverse ecosystems, depend heavily on natural resources to generate economic growth. Therefore, the challenge for this region is to reconcile the demands of growth with the need to protect and manage its habitats and resources in order to achieve sustainable development, while facing global environmental threats. Thus, education could be the answer in the creation of new and sustainable technologies, which could not only save the environment now but also help in safeguarding it and developing new techniques to protect it in the future. Innovation starts from the need to change. Then, education relates to sustainable development since it brings up effective initiatives and discoveries in face of policy makers through investments and partnerships while promotes economic growth.

Conclusion

Based on the findings of this study, it is possible to draw the following conclusions:

1. Education was one of the important factors that allowed the success of East Asian economic model (EOI).
2. Latin America and Caribbean invests mostly in primary education since it started to concern about providing universal access to education in recent decades.
3. The investment in secondary and tertiary education is low. This affects negatively the student performance at school, at university and later on at labor market.
4. Other sectors of society, such as the private sector, struggles due the low quality of skilled labor in the region. This makes them search for new alternatives like the establishment of many partnerships with the public sector in order to obtain high-level skilled professionals.
5. With the investment in high quality education, the region should achieve its potential by having skilled professionals able to create and develop new and sustainable technologies.
6. Education is the key piece in achieving ISID and SDG Goal 9.

Recommendation

After considering the findings and conclusions of this study, this essay offer the following recommendations in an effort to overcome the industrialization challenges of the Latin America and the Caribbean region in achieving the Sustainable Development Goal 9 and an Inclusive and Sustainable Industrial Development (ISID). In addition, the report provides recommendations for increasing the investment on education and obtain high-level skilled labor:

1. Latin America must invest more in secondary and tertiary education.
2. The key word for these investments is partnerships. Thus, the establishment of these partnerships must include all sectors of society, such as the private sector, civil society organizations, multinational development institutions, and all parts of the UN system.
3. Each country must decide how to improve de quality of education. The establishment of educational standards would help in achieving this goal. Thus, the public sector must held meetings with other sectors of society to evaluate which mechanisms should be considerate as most effective. However, some alternatives this essay recommends is:
 - a. The investments must offer to the student the capacity to exchange knowledge with other students and other professionals from different countries. This way, the donation of computers to schools and the promotion of exchanges programs are extremely important.
 - b. Students and professionals must participate in extracurricular activities that promotes sustainability and inclusiveness and that challenges their potential in order to become high-level skilled professionals.
 - c. An important task is to analyze how to maintain these students at school. Since this could be a response to several factors, a deepen study must be made in order to analyzes the situation.
 - d. All countries must analyze the possibility in expanding the time that the students spend at school per day since it influences directly in their performances.

References

BAER, W; GOLDBERG, K. *Industrialization in Latin America: Successes and Failures*. Journal of Economic Education. 15, 2, 124-135, 1984. ISSN: 00220485.

CARDOSO, F.H.; FALETTO, E. *Dependência e desenvolvimento na América Latina*. Rio de Janeiro: Civilização Brasileira, 2004.

Economist Intelligence Unit (2008), *In search of business sustainability: Latin American education and the role of the private sector*. Available in: < <http://graphics.eiu.com/upload/FedEx.Educ.loRez.pdf> > Accessed in 26 dez 2015.

KAY, C. *Why East Asia overtook Latin America: agrarian reform, industrialization and development*. Third World Quarterly. 23, 6, 1073-1102, Dec. 2002. ISSN: 01436597.

PIO, C. *Relações Internacionais: Economia política e globalização*. / Carlos Pio. – Brasília: IBRI, 2002. 164 p. ; 23cm. (relações internacionais; 8).

OECD (2015), *Education at a Glance 2015: OECD Indicators*, OECD Publishing. Available in: < <http://dx.doi.org/10.1787/eag-2015-en> > Accessed in 27 dez 2015.

OECD Statistics. Available in: < <http://stats.oecd.org/Index.aspx?DatasetCode=RGRADSTY> > Accessed in 30 dez 2015

UNESCO (2015), *Latin America and the Caribbean: Education for All - 2015 Regional Review*. Available in < <http://unesdoc.unesco.org/images/0023/002327/232701e.pdf> > Accessed in 26 dez 2015.

World Bank (2008), *Economic Returns to Investment in Education*. Available in < http://siteresources.worldbank.org/INTMENA/Resources/EDU_02-Chap02-Education.pdf > Accessed in 04 jan 2016.