

Chile Education Crisis. Case Study Part 4

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Abstract

In a series of articles, we have focused our attention on the Education Crisis choosing the Republic of Chile as a case of study. This is indeed a rather sensible and illustrative example, of the situation, we are currently going through, with an increasing demand from several and different sectors of the society. In this study, we examine the economic situation from both macro and micro viewpoints, the capability of the country and the government in office to attend and satisfy all of the increasing numbers of requests from the citizens and the real opportunity available to enhance the quality of life of the whole society. The access to education, housing, food and local expenses, in general terms; welfare for the whole society is the main target for any kind of society around the world. We are very much aware that every single society should be more proactive and creative to increase the life quality of the population, otherwise the involution process is high likely to succeed and this process seems to be irreversible. We strongly believe that an old fashion and non-updated education system is a waste of time, energy and money. The best people in the society should be encouraged and incentivized to deal with both creation and innovation so as to be in the position to compete in the global and open market. Everybody should bear in mind, that the fourth industrial revolution is already hitting the market and the job opportunities. Some traditional jobs and professions have become, nowadays rather obsolete and meaningless and therefore, it is essential to choose an academic career along progress and avoiding the trivial and old fashion marketing.

Key words: Education, Welfare and Fourth Industrial Revolution

I.) Introduction

This article is intended to focus the reader's attention upon both the advantages and disadvantages of the Chilean Education System to face the many challenges, in due course, as a result of the fourth industrial revolution. There are a number of new opportunities for a well-organized society to take advantage of this new paradigm; nevertheless, we believe that in small economies, with a clear lack of innovation and creation a U-turn should be done urgently.

We cannot continue doing just the same regardless of what the advanced economies are doing all over the world in fields such as; education, economy, research, innovation, creation and so forth, since we know beforehand, that the results will not be in line with what is being created in advanced countries all over the world.

We strongly believe that the main authorities of the country, entrepreneurs, and scientists as well as other members of the society should pay attention to the consequences of this new industrial revolution. It does seem reasonable and urgent to suggest students entering the Higher Education System to study those academic careers with future and employability [1-6], otherwise, the whole country activities will become less relevant as far as the world economies and goods are concerned. (There is no doubt that a number of countries have been surviving from the exploitation of their natural resources, tourism and services, nevertheless, the world is moving a lot faster and new discoveries are already in the market or in the process of becoming available. Any country unable to be in line with this revolution is bound to become less competitive and sadness irrelevant in the global world market).

We are quite convinced that, the new professionals should be trained according to a new paradigm, based upon creation and innovation in the state of the art. It is never too late to arrive at the right decisions to be taken and these should be made quite clear and socialized with the whole society.

Although what it has been written in the above paragraphs, we need to become more proactive and worldly wiser since Governments should deal with more complicated processes in the very near future. [5-9]

In a series of articles [1-4], we have dealt with a number of attributes, which are of paramount importance to improve the quality of life for well-organized societies. The main target of these studies is to both focus and underline the importance of the knowledge in the state of the art. It is important to realize that nowadays, broad topics such as Robotics, Artificial Intelligence, Data Mining, Nano Science, Nano Technology and Biotechnology are the basis for any development to be achieved in the short, medium and long term. Although we recognize the importance of these broad areas it is also to be said, that we have not done the work properly in due time and the time lag with the developed countries should be roughly 35 years. Chile is a sad example of a country, where highly qualified professionals are, in number, either scarce or nonexistent (mainly away from the capital, up to the north or down the south of the country). Also, the planning of the capital of Chile has been rather unfortunate and roughly half of the total population of the country lives in the capital (in the range of 6 up to 7 million people). Just to deal with the number of complex problems associated with employability, health facilities, housing, transport (mainly: buses, taxis, underground) and so forth is indeed a formidable task. This is quite a challenge for any Government in office and of course for the productive sector.

We must develop and increase economical resources on a regular basis, so attributes such as proactivity, novel ideas, entrepreneurship and social business among others are to be considered seriously. Furthermore, we must keep the right balance between investment and the environment and this is indeed not a trivial equation to balance and work out a sensible set of solutions. Chile has a great number of natural resources, such a Copper, Lithium and Rare Earths and also a great dessert and a rather unlimited source of solar energy. There are also a number of other traditional resources such as forest, wine and other commodities; however, these resources should be handled with most caution and care, so as to keep and improve the quality so as to remain competitive and proactive in the market.

We feel that, once again, we have not, as a country, done the work on time on a proper manner and therefore a substantial change of paradigm should be considered and taken into account to plan the economic policy for this country in the very near, medium and long future [9-18].

Although what we have already mentioned, a number of countries have been taken analogous actions so as to speed their economies and to work on a more sustainable basis so as to be ready for the future challenges at present and the near future. A weak point of the Chilean economy is the lack of enough petrol to keep the industry and their products in action and to create goods. There are a number of actions to be taken to generate energy using different media such solar panels, Aeolian (wind power), sea water, geothermal energy, hydraulic energy and so on. The reader will notice that to work on these areas means to invest a huge amount of money. In small economies such as the Chilean one, the resources are rather limited so this handicap (limited resources) must be lifted should we want to make any progress at all. It is obvious that the country must work out a clear and transparent policy to attract new investors.

We also need resources to advance the state of the art in Nano Science and Nano Technology, taking advantages of our well-gifted scientists and also to welcome first class people from abroad.

We suggest that a high Level Research International Center based in Chile may be a sensible starting-point and could of great benefit to our Higher Education System and also to the Productive Sector.

The above-mentioned Center of Excellence should concentrate future efforts of the country and in particular of the Private Sector, so as to give birth to valuable patents, exchange with Universities and the Research Centers of the leading Companies in the country. Due to the formidable challenges we are facing as a country and citizens, we should make a great effort as a society to advance towards the future and to find those points which are able to joy us, rather split people in random way. A well-organized society is certainly the starting point for future developments (creations and innovation) and will allow us to increase the people living standards. We cannot forget that healthy brains mean healthy bodies.

This article will be devoted to explore some eventual solutions to the many obstacles mentioned in the previous paragraphs of this introduction.

II.) The Education System in Chile. Learning Ability and Motor Development Process.

In this article, we shall focus our attention mainly upon the role played by the Higher Education System to be regarded as a learning ability and motor development process to help the development of the country so as to increase the quality of life of the citizens. The Higher Education System in Chile has been thought and designed according to three levels: (a) Universities (Public and Private), (b) Professional Institutes (IP) and (c) Centers for Technical Training (CFT). These Institutions receive students from the National Secondary Education System. The level of complexity and the requirements for the students to enter these Institutions is rather arguable and we believe through the efforts made, that the overall system has proved not to be right up to the excellence standards needed to train professionals able to cope with the requirements compatible with the fourth industrial revolution.

In a previous paper of this Education series [3], we have listed the Ranking of the Top 20 Universities in Latin America, as well as the Global World Ranking, Ranking Web Universities. Consejo Superior de Investigaciones Científicas and the World University Rankings.

The best Universities in Chile, according to various national and international rankings are; Universidad Católica, Universidad de Chile, Universidad de Concepción, Universidad Técnica Federico Santa María, Universidad de Santiago de Chile, Universidad Austral and Universidad La Frontera de Temuco [3]. We do recognize that the other Universities do an increasing quality job and therefore are well recognized in Latin America and Chile [1-3], however, their relative weight is smaller but relevant.

Next, we shall concentrate mainly in the two top Universities in Chile with reference to all known national and international rankings. We must mention that both the Universidad Católica and the Universidad de Chile show up the best results in research and the number of the international publications in peer review journals with the right impact factors. Additionally, these Institutions show in average the best academic staff and students (undergraduate and postgraduate students).

In Latin America, these two Institutions may be classified as Complex Universities and within the limitations of resources, have done a magnificent job to have available fairly good libraries and laboratories for their researchers and students. Furthermore, in average terms they train very good professionals and many of them travel abroad to continue with their Ph.D. studies and post-doctorial positions in the best Universities around the world, in countries such as; the United States of America, the United Kingdom, Germany, France, Israel, Belgium, Canada, Australia, Brazil and so on.

It is also to be mentioned that Chilean postgraduate students travel in bigger numbers to Universities in the United States of America to work for their higher academic degrees and post-doctorial training [3].

It is essential to point out that these Institutions are closer to do a fairly good research in many of the broad areas we mentioned in the Introduction, say; Robotics, Artificial Intelligence, Data Mining, Nano science Nano Technology and Biotechnology [1-3]. An increasing research of good quality is being done; nevertheless, there is a lot to be accomplished so as to reach some reasonable standards already obtained by the top Institutes, Research Centers and Universities, mainly in the United States of America, Europe, Asia and so forth. We have only mentioned, those countries where bigger numbers of Chilean students travel to work for their higher academic degrees and professional training [3,19-23].

III.) Broad Areas of Advanced Research.

There are a number of initiatives ongoing at the moment in Chile, in Universities and Centers of the Private Sector to decrease the gap when compared with developed countries, as far as the already mentioned broad areas of advanced research are concerned. There is a recent report in the press [24], where some experts (mainly devoted to artificial intelligence) make a forecast about some careers which are most likely to be successful in the near future, such as (a) robotics and automation (computing programmers and mechatronic experts), (b) soft and hard skills (such as; artists, teachers, lawyers), (c) careers of health (such as; nurses, biomedical sciences and biotechnology), whereas other careers are most likely to disappear (mechanics, drive conductors, lawyer assistants). As a very illustrative example, these experts mentioned the case of South Korea. This country is perhaps one of the most automatized countries all over the world, though the government policy were taken in due time and the rate of unemployment is about 4 % [24].

At this point of the discussion, it is worth mentioning that, as it was pointed out earlier in the text, Chile shows a time lag with regards to advanced economies and developed countries of about 35 years, which is rather alarming. As a country, it does seem to be a priority to consider and work out a set of programs to persuade the citizens to work harder and harder to get involved into the big challenges, which they will have to face in their lives.

In Chile, there are a number of Institutions focused to different tasks and they keep fairly updated some statistical about important issues such as; income levels, quality of the education, jobs availability, wages, social security and trade unions among others items [5-9,19]. All of these data basis should be regarded with caution since they may be misleading to the general readers.

We know where our weak points are so rather than long standing discussions and debates, we need to work out eventual solutions. We must have a clear picture of our weakness as a society and take the right decisions to redefine some targets to be accomplished in, say 5 to 10 years.

IV.) Conclusions

This series of articles in education, choosing Chile as a case of study has been focused to discuss on general terms, the many challenges that the Chilean society is facing at present and the need for urgent changes of paradigm. The Society in general terms has been living on a daily basis upon a number of rules, which are getting obsolete and nonproductive. We believe that we cannot continue doing the same in all relevant items such as education, economy, and environmental procedures and so on, as we used to do two to three decades ago.

A strong restructure of the system as a whole is due urgently to redirect our efforts; energy and resources to catch up with the new technologies and advances in all fields of knowledge. A number of advanced nations all over the world have made a significant amount of changes so as to prepare their Institutions and citizens for the fourth industrial revolution in due course. It is rather straightforward to realize that these countries are indeed in a better position to compete in the global market and to get a positive payment balance; namely these nations can produce better quality products and as a result they can certainly show a solid economic growth in comparison to weak economies of the so-called countries of the third world. If countries like Chile do little or nothing to improve, it is almost certain to conclude that we shall become poorer and poorer in the near future.

It is also relevant to emphasize once again, the importance of creating a **New and Advanced Center of Excellence** in Chile to deal with all these new challenges and to start working seriously to advance our knowledge and ability to enter in the world market with less dependence in technology developed abroad.

This Center of Excellence is being thought as a nucleus to give life to others along the country and by doing this; the country will be able to make the Higher Education System more solid and stronger. We must reach a point, whereby the research funding will be placed in good hands and in substantial better Education's Institutions.

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