

## **Achieving Sustainability One Student at a Time**

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### **Antecedents**

At the 70th Session of the United Nations (UN) General Assembly in September 2015, member states adopted the 2030 Agenda for Sustainable Development. At the heart of the Agenda are 17 Sustainable Development Goals (SDGs), including SDG 4 on education with its 10 targets. SDG 4 aims to support learning that influences people's choices to create more just, inclusive and sustainable societies. To advance progress towards SDG 4, the global education community adopted the Education 2030 Framework for Action in November 2015, a roadmap that outlines implementation strategies on issues ranging from teachers and finance to monitoring indicators and coordination mechanisms (UNESCO, 2019).

To this date, SDG 4, Sustainable Education, has been evaluated only once. We are beyond one third of the 2030 agenda deadline and it is clear we are behind schedule in the successful implementation of this important goal. We can still achieve important progress in this area and meet the mark if we take effective steps. This essay proposes the Bolivian way.

### **World chronology of education**

One of the skills that distinguish humans from other species is their ability to pass along knowledge and construct upon the experiences of our elders. This has been happening since hominids populated our planet. Older generations of hunter/gatherers were able to hand down knowledge to their progeny via stories that took the shape of oral accounts mixed with myth and legend and stories were surrounded by bits and pieces of primitive knowledge that went on from generation to generation for centuries. This first stage of education took place at home and at the village, with parents and neighbors being the first and possibly the only teachers of the new generations. The general formula for this type of education was "Parents and neighbors experienced it first; it is our job to learn from them and repeat the same experiences during our life time". This was the case with things like preserving fire or hunting. According to Carl Sagan, former Professor of astronomy at Cornell University, hunters could track the herd they were pursuing and tell how many, what time they had passed by that location and whether or not there were weak members that were easy to hunt (Sagan, 1994). Children were simple replicators of parental experiences and any differences in the application of the passed knowledge created new situations that needed to be corrected so the experience could be repeated as close as possible to the original experience lived by the parents.

The accumulation of knowledge was only possible as long as the oral stories were kept in the folklore and the memory of the new generations was good enough to keep the narratives going. It was preserved in the same way for many generations until the advent of the written records. For the first time, we could leave our legacy printed on the walls of

a building or clay tablets cooked for the purpose of preserving the original stories without radical change. This was the beginning of what we call history. The written records gave us the possibility to accumulate knowledge and to add new knowledge to the existing information about almost any area of human endeavor. Alphabets grew more sophisticated and more efficient to the task. From ideograms we went to letters and from clay we adopted paper as the new recording device and therefore to the first books. Books were originally scrolls of papyrus and later took the shape we are more familiar with. On those books, the authors poured their knowledge and information was shared with only a few who were lucky enough to have the means and the right social and gender class to have access to instruction (Harari, 2019).

Education took a new shape. However, the one way direction of the whole process was not changed. The experiences taught were not first-hand experiences, but experiences that grew from the pages of books about the same topic and became studied knowledge to the first educators. The Greek and Roman schools are examples of this because they were more widely known but almost everywhere in the world education evolved with little change. The teachings of Socrates, Plato, to name a couple, stand out for their specific characteristics. All these first educators were philosophers because they knew about many areas and their disciples learned a mixture of lessons often without any other source of information than the voice of their teachers. Socrates was considered the first scientist for his capacity to classify not only the subjects of his study, but for his ability to classify knowledge and teach in an orderly manner. Plato, once a disciple of such great thinkers, was able to organize knowledge that covered the areas of human knowledge and created the first school of universal knowledge. He is attributed with the creation of the word 'university' for this way of conveying knowledge. Education, then, was in the hands of a few and only a few were educated, oftentimes living in their teacher's home. Students were trained in all areas of importance, such as the study of heavens, art, music, and the art of fight. In order to receive instruction, you had to be a boy, born to a well-to-do family or be lucky to be adopted by the instructor (Harari, 2019). As can be seen, education had very little to stand on, but the knowledge of only a few scholars and their few students.

During the Middle Ages, the situation did not improve. The school had moved into the palace of the ruling king and teachers were called into the palace in order to teach lessons only to the royal children with the exception of the girls. Education was still a privilege of the male members of the wealthy. Let us not forget that one of the best ways to rule over people in those days was to keep them ignorant. Rather than an expression of power, this showed that rulers were weak despite their position of power and entire generations were sacrificed under the blanket of ignorance. It is not surprising that science evolved so little in comparison to what could have been achieved if all people were included without distinction of race, gender or social class.

Slowly, humanity progressed towards a more inclusive way of educating students and teachers proliferated and started humble efforts to teach. Churches were turned into classrooms from Monday to Friday and teachers only had a chalkboard and chalk that they elaborated themselves to teach. The word classroom was slowly making its way to the minds of people. So children of different ages and different education levels were grouped in a classroom taught by a single teacher. Clearly education had changed very little since the Greek and Romans. The only important difference was that this time it was reaching more children and also girls. Very few went beyond secondary school. Girls were expected to only know to read and write and resume their household chores and boys could go past primary education, but were soon put to work on the farms (Harari, 2019).

Teachers had the opportunity to touch more lives, but it was society who would make it very hard for anyone to pursue a university degree.

To this day, some countries make it hard for girls to attend schools and to keep in school beyond the age of 12. During my Teaching Excellence and Achievement fellowship in 2014 at California State University at Chico, I met colleagues from South America, Africa, the Middle East, Asia, and Eastern Europe who reported that this basic human right has not reached all children in remote regions of each country, but also that the most vulnerable population to change was the female. If economic conditions are not favorable, the girls are removed from the schools and put to work for little money. In countries in the Middle East, girls are allowed in the classroom, but they are not allowed to sit in the front rows or to participate in the classroom discussions. They are only limited to listen and sometimes to write.

In all these contexts, I have found the one directionality of education. It is the same concept repeated again and again until boredom. Only the delivery form changes, but in essence, it is the same concept of trying to clutter students memory with names, numbers and facts only to have them regurgitate them later on an exam. The last scenario that I described has only changed slightly since that multi-level multi skill classroom. Schools have only evolved to the factory model after Henry Ford introduced the concept of assembly line. Teachers will host a group of students of the same age bracket and pour into their minds all the information that needs to be remembered later to take exams (Freire, 2015). My experience teaching in American school has added a little more variety to the model by adding more flexibility to the age factor but I still see the system is founded on grading only the knowledge our students can remember during a test. Very little space is left for homework or classwork. The test is still the most important character in this constant search for the best way to teach our children. Students will decide if something is worth doing if the grade allocated to it is worth the effort. They treat their grade as if it were money. In a system developed for creating the biggest profit, I do not blame them. They are just getting prepared to go out there and get the best profit out of life disregarding the well-being of others. It is a skill that is fostered since early childhood so my impression is that that is the only skill they master after graduation. The knowledge that granted them graduation is soon forgotten and all those valuable hours of instruction are lost in time. The reader only needs to try to remember the algebraic equations we were diligently taught in high school to know that we need to turn education into something more sustainable.

### **Geographical origins of change**

It was during my experience as representative of one of the leading publishers in the world, Pearson, that I was engaged in other areas of education besides English Language Teaching (ELT). I became acquainted with some of the finest authors in their respective fields. Among such rich conversations, I was led to find the works of the Brazilian author, Paulo Freire, who described education as a bank statement. It will record every transaction made and will give us an outstanding balance of how much we have (or do not have). This balance is translated to the word 'grade' in the school system (Freire, 2015). This was the confirmation I needed to know that my conclusions were on the right track. He had been able to describe with the bank analogy, everything that was going on in the classrooms of the world. I started traveling around South America collecting data that would either confirm or refute this thesis. I was appalled at the results

The Andean Region of South America is composed of countries like Argentina, Chile, Bolivia, Peru, Ecuador, Colombia, and Venezuela. The region is traditionally served very little by teacher trainers including authors, publishers and/or consultants. The region is traditionally in a constant economic struggle. The economies in each country of the region have always been characterized by inflation and the line of poverty in the entire region is one of the lowest in the world. This has caused a deficit in education training across the region. The Andean Region's demographics and constant economical struggle make it difficult to reach smaller cities for local, national governments or international counterparts, who are constantly trying to improve education and teaching. Publishing companies, which offer training to teachers as support to use their textbooks, depend on sales figures to invest in bringing extra help to those markets. We have a strong call to make a difference in our schools.

Individual efforts will only reach a few teachers in each community. However, if we make it an international effort to teach SDG's through English language lessons, the impact of our efforts combined will reach at least 3 million teachers globally.

During my time as a Teaching Excellence and Achievement fellow in 2014, my research went on internationally. I collected information from Argentina, Chile, Peru, Colombia, Venezuela, Iraq, Pakistan, Kazakhstan, India, and Nigeria to name but a few and in each of those countries the situation was very similar. Girls were the weakest population and not all the children were taught in rural areas. I was convinced that it is important that the lessons acquired in our TEA training reach the most teachers to create real change in education in our region. If only a few teachers are exposed to SDG training, the efforts will fade and no real change will take place. If we reach hundreds of teachers in each country, we will start to see the fruits of that effort and students will benefit more. I have already seen changes occurring at a local level with teachers planning better and including the use of technology in their classrooms and managing their groups better. I want this change to happen in many more schools in the region.

The major problems I have identified as a result of my conversations with other TEA fellows are student indiscipline, lack of interest in the lessons and very little inclusion of the female population in education and opportunities.

Indiscipline: We believe students have lost sense of being educated due to the fact that students consider lessons dull and lacking depth and relevancy to their daily lives. They are reacting negatively to anything that does not stimulate their senses as TV, internet, and computers do. They criticize the teachers for not moving ahead and implement more interesting techniques and question their labor.

Lack of interest: The major reason for this is that thanks to computer technology and internet, students have access to information and if they are not guided, they might believe they do not need to even go to school. We have to be proactive and let them know that school is not only about information they need to have access to, but also about acquiring skills that will be helpful for their lives in the future.

Disadvantages for female students: Traditionally, the Andean region has been a male oriented area of the world and girls have always been discriminated against. Those who were lucky to go to school have been left behind by teachers who consider very little education is needed if the woman will only be a homemaker. This has to change to provide for more equality in each classroom.

I believe I can address the above issues with the implementation of the SDG 4 objectives:

The first area, indiscipline, I want to address is the area of planning lessons with more accuracy to address common problems in all the countries that participated in the program. I believe better planning can take care of most of the mentioned problems. Unfortunately, Latin America is not famous for planning and this may result in inefficient use of teaching time and techniques. By helping the teachers choose their objectives more accurately and giving them ideas to implement their plans, we can create more synergy in the class that will help students learn better and improve their grades.

Regarding the second issue, lack of interest, I plan to address is empowering the teachers with ideas on the implementation of instructional technology that is modern and can help motivate students and help the teachers gain some of the control they have lost as a result of the fast evolution of education technologies in the world.

The last area, gender differences, I want to address is the improvement of classroom management and the inclusion of women in the education opportunities in the region. We can see a high degree of indiscipline and lack of attention in our classrooms. The female population is traditionally given fewer opportunities for participation and biased education as a result of traditional ways of bringing up children in the region. By giving the teachers the techniques they need to guarantee a more equitable education for all the students, without exceptions or biases, we can foresee better opportunities for male and female students to compete in this globalized world.

I believe the impact I can have in the way we are addressing education in Latin America can and should change to be more efficient and inclusive for everyone involved, from decision makers to teachers and students. I consider this is the right time to address this issues because our countries are undergoing reforms in the educative sector and they are open to ideas and efforts to improve in each area of their reforms.

### **Plurinational State of Bolivia's Educative Reform**

At present, Bolivia is gliding through the third constitutional period of government of President Evo Morales Ayma. The endogenous tendency of the present government and the lack of an effective government plan has undermined the public perception of the country's economy. Right now all efforts made in education have to be aligned to the indigenous cosmovision, which is "anti-imperialist, anti-globalization, liberating, and decolonizing (PROFOCOM, 2013)" (Art. 1, entry 2, Law 070). The opposing parties are strengthened by the constant demonstrations and strikes demanding an attachments to the mandates of a plebiscite, which states that President Morales should leave power and not participate in a fourth reelection period. This would be unconstitutional, but the Electoral Court voted it was a human right to participate and it allowed President Morales to run for a fourth period which has already made him the longest democratically elected president of Bolivia.

The new Educative Reform, called Ley 070 Avelino Siñani—Elizardo Perez, has been the only national law which has been effectively running for the 12 years that President Morales has been in power. We could say that it is the only political measure that was scientifically built for education in the 21 century. It was presented by former Minister Felipe Patzi, who was demoted shortly after the law was promulgated, but it has been

running ever since by the only minister who has not been changed during the last 12 years. The Ley 70 guarantees bilingual education (Spanish and a native language spoken locally) in all public schools and even trilingual education in the main three cities of Bolivia, La Paz, Cochabamba and Santa Cruz. The three languages would be Spanish, official language of Bolivia, Aymara, Quechua or Guarani (the most important native languages in most of the national territory), and English or French (foreign language). Bolivia is slowly progressing in the implementation of the Reform which will eventually institutionalize the Plurinational Educative System (SEP acronym in Spanish) (PROFOCOM, 2013). To date, we can observe the same kind of difficulties that other countries have with teacher training and implementation of such effective model of education. Training centers implemented by the government have not been able to provide the market with well-prepared teachers who are versed in the new methodology.

Schools in Bolivia are teaching foreign languages again since primary school, but the reform strictly enforces the teaching of all content in the native language in each district. There are individual efforts to develop content and materials for primary and secondary levels of education. The reform is so particular to Bolivia that foreign publishers have given up thought of producing materials for such exquisite demands.

### **Legal framework**

The legal framework for this Law is within Ley 070, Avelino Siñani—Elizardo Perez, promulgated in 2006 for Bolivian education. 9 years before the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDG's) was adopted at the 70th General Assembly of the United Nations. Pursuant to Title I, Chapter 1, Article 1, entry 8 of the Law Avelino Siñani—Elizardo Perez, Bolivian education is “intracultural, intercultural and plurilingual because it articulates a Plurinational Educative System (SEP) from the empowering of knowledge and language that are innate to the indigenous nations; because it promotes the interrelationship and convivence in equality of opportunities through mutual validation and respect among the cultures of the Plurinational State and the world” (Bolivia, 2006).

Title III, Chapter 1, Article 12, entry 10 about the Principles of curriculum organization, specifies that in urban centers “are trilingual, so it allows a native language, Spanish and a foreign language in all the Plurinational Educative System, including technical institutes under the subsystem higher education at technical level” (Bolivia, 2006) Every high school student is expected to graduate with a technical degree and many students should achieve translator level in each language.

Article 13, entry 6, in the same Chapter estates that it is an objective of the curriculum organization to “develop an intracultural, intercultural and plurilingual approach of education in all the Plurinational Educative System” (Bolivia, 2006).

Furthermore, Section I, Article 14 (Strategies in the use of languages) “Because of the linguistic diversity that exists in the Plurinational State, the following mandatory strategies are adopted for the use of languages within the Plurinational Educative System (Bolivia, 2006)”

Entry a) Spanish is the official language in all the territory of the Plurinational State. It will be used in urban centers and anywhere Spanish is the language of communication

Entry b) Foreign language:

The teaching of a foreign language is gradual and mandatory from primary school, with

the corresponding methodology and specialized staff during all the 12 levels of the Plurinational Educative System (SEP), which includes the regular school, alternative and special school and higher or professional school subsystems.

Entry c) Native language

There are 33 nations within the Plurinational State. Therefore, there is an equal number of native languages. Each nation is required to teach content to their students in the language of communication of each ethnic group. The most important ones are Aymara in the western part; Quechua in the central part and Guarani in the Eastern part of the Plurinational State. Each geographical area is divided into native nations, each with their own language of communication. Schools must adopt and adapt the content of instruction to their corresponding language and cosmovision.

In order to validate all school syllabi the institution entrusted to implement teacher training, and teaching at every school, SEDUCA was created to review all documents and syllabus based on the Educative Reform guidelines. They will focus on the content and evaluation of competencies mandated by the Law Avelino Siñani—Elizardo Perez.

### **Law 070, Avelino Siñani—Elizardo Perez**

To try to summarize this law in only a few words is probably the biggest challenge I have had to face. I will paraphrase to the best of my ability the content of the training manuals from PROFOCOM, 2013, which is the government official institution in charge of the validation of documents, training and supervision of each school syllabus in the Plurinational Educative System.

First of all, we must understand that education does not begin at school. One of the most interesting precepts of this law is that parents are responsible for the education of their children since they are born until the kid's third year of age. This is a very important field and has not been supervised in its true dimension, but it makes parents more responsible with their decision on family planning and responsibilities. Once it is fully implemented, it will be illegal to neglect the education of your children at home. This stage of education does not take place in a formal environment such as a school. It takes place at home with both parents and rest of family participating in the first exposure of children to language, music, food, and routines that are particular to every household.

After that, we set in motion what would be referred to as formal education. Children will attend a school, where specialized teachers will be responsible for the education of every child following the examples set by Mr Avelino Siñani and Mr Elizardo Perez, two teachers that did an outstanding job in Warisata, a little village in the mountains, under very extreme circumstances. Despite the enormous challenges that depression brought to those impoverished villages, Siñani and Perez were able to construct a school program that contained all the elements that SDG 4 is looking for in a good education program.

It is inclusive. It involves all the participating parties in the community. The main participants of the educative process are the teachers, but it also includes, principals, local authorities and families. It addresses the needs of every community. That is why we do not have a textbook or one size fits all approach. Each community decides what their main problems are and year to year they address those problems through the socio-community project. This project is the guiding light of the whole syllabus for that year. The Project is elaborated by all participant members of the community. Let us say for the sake of example that the most pressing problem for a given community is garbage. The Project

will have to address the problem from all perspectives. The local authorities will express their concern about the accumulation of garbage on the streets and how it is affecting the local budgets. Parents will participate in the composition of the final version of the Project, which will be launched at the beginning of the year even before classes start. The recipients of all those projects are the principals and teachers of the community school. Together, they will decide on the best ways of implementation of the Project from the scope of each of their subjects.

There are four subgroups in which the subjects are subdivided, mathematics and science, life and territory, social sciences, and spiritual subjects. Teachers will work together in each subcommittee and will come up with the first drafts of a year plan that will be the main guidelines of implementation of the project. Each teacher then will draft his or her yearly plan, bimester plan and day to day plan. Only the yearly and bimester plans are submitted to SEDUCA for revision and approval. The implementation of the Project will take place during the four bimesters for the school year. On bimester one the Project will be launched. All participating members of the community will attend and will be conscious of the issue and will help the community to succeed in the full implementation of the project at school and at home.

All of the above implies that knowledge may not come from only one source. Everyone in the community is aware of the problems and will collaborate with knowledge passed on from generation to generation at home, local laws from authorities, and formal education at school.

Students will be exposed to lessons planned in advance by teachers and all the lessons will have to gravitate around the problems that the Project is trying to solve. For example, mathematics will deal with weights and measures of garbage, statistics, etc. whereas science will talk about the impact of garbage on the local flora and fauna or the environment. Social studies will touch topics around society and their abilities to dispose garbage in the most effective way. And Spiritual sciences will deal with the topic from a living well perspective.

The lessons taught will correspond to knowledge and will have only 30 per cent of the total grade. While the rest of the world gives knowledge more than 80 per cent of weight, Bolivian education will assign only 30 per cent to knowledge. The second part of the grade will come from what students can do with that knowledge. They are to create forms in which they will dispose of garbage through recycling, reusing, or any other creative way they design in each classroom. The best initiatives will be rewarded with 30 per cent of the final grade. The other areas of concern are the decisions students make in regards to garbage and they are observed at school and at home so parents participate in the final grade by reporting to the teacher if the child is aware of the way the family disposes of garbage and whether or not the lessons are actually contributing to a reduction or responsible handling of garbage at home or the street. This will amount to 20 per cent of the final grade. Finally, teachers will evaluate the person as such. They will have individual meetings with each child and will ask them to self-evaluate and together they will come to 20 per cent of the final grade, which will complete the 100 points the student needs to complete the final grade. This grade will determine if the student accomplished all the objectives or he or she is in development or needs improvement.

At the end of the school year, the school will host an event in which local authorities, families, teachers, and students report their findings in a document that will be stored at the library for future reference.

## **Conclusion**

By this time we have realized that we may have overestimated our capacity to implement all the SDG's and all their objectives. According to the last report of the Global Education Monitoring Report (2019), my country is at least fighting the problem of universal inclusion to education. With Law 070, we sought to revolutionize the education system's contents and accessibility, based on the values of equity, solidarity, complementarity, reciprocity and social justice (UNESCO, 2019).

Three ways in which we have reduced school desertion are a) The 'Juancito Pinto' school voucher, which facilitates school attendance for poor children by offsetting transport, books and uniform costs; the National Programme on Complementary School Feeding, which began in 2015; the Technical and Humanistic Baccalaureate, aimed at providing an integral approach for human development; and teacher education and professional development programmes (UNESCO, 2019).

In this way, we hope to achieve sustainability one child at a time.

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