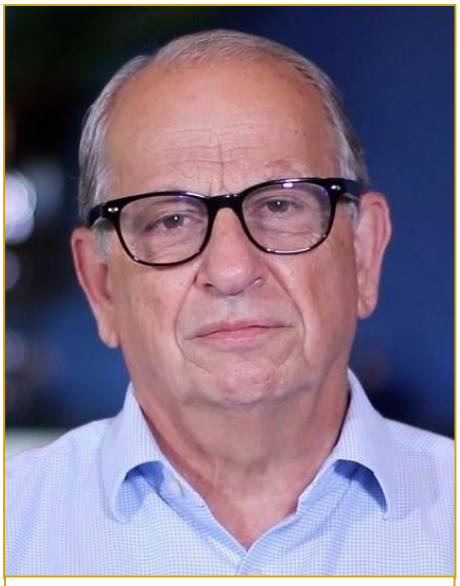
EARTH University "An ACT of faith and a labour of love"

CRITICAL ELEMENTS ADDRESSED IN THE CREATION OF EARTH UNIVERSITY



Prof. José A. Zaglul
President, Global Consortium for Higher Education and Research in Agriculture (GCHERA)

Dr. Robert Carbonell, the first President of the Board of Directors of EARTH University, was asked about the purpose of the institution during its early planning days. His response was: "EARTH is an act of faith and a labor of love." I was listening to the interview at the time but did not understand what he meant. Over the years, I have come to realize that this is the real meaning of EARTH University.

I pen this description of the EARTH University model in the hope that by sharing a lived experience I will contribute to the transformation of certain practices in higher education that can in turn foster positive outcomes for our global society. During my 28 years as the founding President of this alternative university, we took the risk of breaking traditional paradigms in education to introduce new concepts with the aim of enhancing its relevance. The founders of our university were committed to making a difference and had serious doubts about how effectively our higher academic institutions were achieving their mission to educate our leaders of tomorrow. They wanted to challenge themselves and take the risk of striving for something more innovative.

This institution, EARTH University, initiated operations some 31 years ago in the heart of the rainforest of Costa Rica. In April 1989, I was selected and inaugurated as founding President of this new center of higher education specializing in agriculture: a privilege I never imagined being a part of. After almost 30 years leading this innovative institution, I stand convinced that the ideas we tested can positively impact tertiary education on a global basis, and I recount our experiences here so that others may have the opportunity to build upon what we learned.

In the early to mid-1980s, Central America had become one of the main theatres of the Cold War. As it happened, this presented the occasion for the creation of this new university. I am convinced that the resources that were marshalled for the establishment of the institution were a consequence of the political conflict that we in Central America were living at that time. While the Soviet Union was supporting the Sandinistas in Nicaragua and leftist movements elsewhere in Central America, the USA was backing the Contras, who were fighting the Sandinistas in Nicaragua, and assisting other right-wing forces across the region.

Costa Rica was blessed by a succession of visionary leaders, especially in the mid-1940s and the 1950s. The country invested in its public health system with the creation of the "Caja Costarricense" in 1942, and abolished the army in 1949 and subsequently channeled the freed resources into its public educational systems. In later years, Costa Rica declared itself a neutral country in the world's conflicts, invested heavily in reforestation, and more recently set a goal to become carbon neutral, and eventually a decarbonized country. Costa Rica is the oldest democracy in Latin America and every four years holds free elections that are an example to the world.

In the context of such major transformations, it is not surprising that the Costa Rican founders of EARTH University wanted to influence higher education in a positive way on behalf of the country's and region's development.

We all agree that education is the greatest tool we have for individuals, nations, and societies to progress, not only in economic and material goods, but most importantly to achieve a world of peace, harmony, dignity and sustainability for all. The question is whether we are most effectively pursuing these objectives, either in higher education or in the way we behave as a global society? Some of us believe we are not. Our world has advanced in knowledge in the different sciences, we have made many discoveries, and even explored the universe around us. We can communicate instantly, and at almost zero costs, with different parts of the world. However, with all the knowledge and scientific and technological capability we have, we may be sacrificing our planet's environment.

Fierce business competition, where our success is measured by economic profits without considering the impact we cause to other human beings and nature, has created alarming conditions affecting the potential for our society to survive in harmony, with dignity, and with opportunities for all.

In the early days when EARTH University was just starting out, the Berlin wall fell, and with it a new era for the world began. We thought it was going to be an era of peace, and progress for all. But it turned out to be a shift to what I call in Spanish "Capitalismo salvaje" (wild capitalism). We accelerated the thirst for economic power at the expense of nature and society.

What is the EARTH experience, and why do those of us who have lived it and experienced it believe it is a game changer and a beacon for others to follow?

OPPORTUNITIES FOR ALL

First, we have always believed that education should make a positive change in the lives of people and the life of a nation. Virtually all leaders in education will adhere to this principle, but we have observed over the years that higher education institutions do not always offer opportunities to all, and especially to those from the most economically disadvantaged families. This is principally because we rely on entrance exam scores to determine who is admitted to the university. Moreover, those who score the highest on these exams are offered scholarships to cover their studies, although sometimes there are also scholarships provided based on economic need. I have no doubt that when this practice was instituted, it was done with the best intentions to reward those who made the greatest effort and were most dedicated to their studies. This would be fair if everyone grew up under the same socio-economic conditions, which so profoundly affect a person's opportunity to study, and if all had equal professional and family support. However, this is not the true situation. Youth from rural areas, often economically disadvantaged, do not have the same opportunities, nor do they have comparable breadth of academic experience, learning conditions, or advisory support. Most seriously, the entrance exam does not necessarily measure the intelligence of a person. It measures test-taking abilities, and the advantages that come from attending a private or urban school where the conditions are generally more conducive to developing test-taking skills. For these reasons it does not necessarily provide an adequate measurement of ability to succeed at the university. More and more institutions recognize this and are dropping standardized entrance exam requirements and are relying on other factors for their admission decisions, such as secondary school history, extracurricular activities, and college-entrance essays.

We find that those who need education the most have the greatest difficulty getting accepted to the university. On top of that, they are the ones that have less access to financial aid, which is largely based on the exam scores.

EDUCATING ETHICAL LEADERS

The most important mission of the university is to educate our future professionals and leaders. However, today, more than ever, we are finding that too many of our graduates are leaving the university without the necessary leadership skills, undergirded by the values and ethics which are an essential foundation for creating a just society. Our future scientists, teachers, engineers, business persons, politicians, and leaders in all areas must be ethical decision makers to promote a world of peace, sustainability, progress and dignity for all.

The university offers opportunities for students to acquire leadership skills through extracurricular activities, such as student government and student clubs. They may take classes on leadership, but they do not normally have the opportunity to develop these skills as part of

their formal educational experiences. They may work collaboratively in teams as part of class projects, but this opportunity is often too limited. This is a skill frequently left to be picked up after graduation. But it may or may not be. And leadership ability is identified more and more by business and the professional sector as one of the essential "soft" skills critical for professional success and achievement.

How do we build leadership skills based on ethical decision-making? This requires that we build into the educational system practical opportunities for students to perform critical leadership responsibilities, to lead teams, projects, clubs, or other academic activities, which involve planning, budgeting, decision-making, and responsibility for successful completion of the tasks involved in leading. They should have the opportunities to make decisions, execute the decisions, and through reflection evaluate the ethics of their decisions and the subsequent results.

Ethical decision-making depends on having a solid value base. Therefore, we have to address the issue of how to include value-based education as an integral part of a student's university programs and combine this with the development of ethical leadership skills. This is usually not emphasized sufficiently in our university educational systems.

VALUES-BASED EDUCATION

To educate ethical leaders requires a strong values-based education. Most world leaders, whether in politics, the private sector, NGOs, or other leadership positions, are university graduates. For this reason, universities have the power to positively influence the world in a very short time if we agree to educate leaders with strong values and ethics; honest leaders with the values who can take us towards greater prosperity based on respect for humanity, diversity, the environment, and each other. We must understand that we are all children of this home we call Earth; we need to respect it and manage our natural environment and resources to ensure quality of life for our future generations.

The missions of our institutions should highlight the universal values we stand for as a global society. These values should be taught systematically across the curriculum and across the faculty so that universities can be true educators and role models.

As we go through the COVID-19 pandemic, we should reflect on who we are as a global society. This pandemic reminds us that everyone faces its potential effects, independent of race, religion, origin, wealth or political power. Yes, it appears to be affecting some groups at a greater rate, based on still little understood reasons. However, this invisible agent, seemingly insignificant, can destroy us. We now realize how fragile we are as a society, that we can only survive by standing together. This pandemic should teach us that the race for material returns is not the only objective of humanity. We should reassess our place in the scheme of things and recognize that we depend on nature and on each other, and that only our arrogance has led us to believe we can conquer the world as a superior species. But this requires us as a

society to have leaders with strong values of mutual respect, honesty, empathy for all, and the intelligence to understand that we must put all of our differences aside and work together, united.

We believe universities should emphasize the "core" values mentioned above. When we talk about values, the question usually asked is, Are there really any core values? Who are we to pick among values which may change over time or differ between regions and cultures? Our answer is that there are some universal values which do not change over time, or by culture, or even religious background. They are the same all over the world. Mutual respect, honesty, integrity, and conflict resolution through dialogue are universal. But the most important value of all is love. We rarely mention love in business and education. This puzzles me, as love is the most universal of values, the one that frames all others. With love, you are honest, fair and respectful. With love, you help the neediest without forgetting the rest of humanity. With love, you respect nature and you want everyone to succeed.

When we look at the reality of our world, we cannot help but question why 80% of the wealth of the world is concentrated in 1% of the population. This cannot be normal or sustainable. We should strive to achieve a society of prosperity with dignity and opportunities for all. Health, education, food, shelter, and proper living conditions should be our goal, the goal equally of businesses and individuals. If we as academic institutions believe in this mission, and we transform ourselves with this purpose and mission in mind, we can change the world.

How do universities usually approach a value-based education? They universally include values as part of their mission and vision statements. They usually include values in lists of their expectations of faculty and students. Or they may offer a course on ethics. But rarely do we find ethics systematically embedded across the curriculum, in extracurricular activities, and in student life. Ethical considerations are seldom expected or required to be systematically reflected in the behavior of faculty, staff, and students, at least beyond the basics.

However, university professors are teachers, researchers, innovators, and outreach agents with communities and businesses. They publish, invent new products or processes, and in some cases create businesses of their own. As part of their professional role, they should broadly demonstrate ethical behavior. They should reflect a commitment to such principles as honesty, integrity, objectivity, and environmental sustainability, among others, in all these settings. These values should be reflected in their behavior on and off campus, as professionals, and as role models for their students and society. As part of the systematic education of values within universities, faculty and administrators should be considered as role models for their students. Much student learning comes from emulating their most respected, favorite professors, so they must be evaluated on this.

Universities often do not consider the inculcation of values as part of their mission. However, since strong values are critical to ethical decision-making among our leaders, this should be reconsidered. Universities are normally ranked by research factors such as faculty publications,

investments in research, infrastructure, and quality of faculty as assessed by academic degrees earned. But little attention is given to the quality of an institution's educational practices and the quality of its graduates. Are their graduates leaders in their professions, innovators, leaders in business? Have they created new products that benefit the world, new and more sustainable systems, new employment? And have they contributed to improving their communities? All of these are important contributions that universities make to the world through their graduates, and through the generation of new knowledge and innovations. Perhaps a better way of ranking universities is through the positive impacts of their graduates and faculty on society.

STUDENT-CENTERED, INTEGRATED, EXPERIENTIAL AND PARTICIPATORY LEARNING

The word learning rather than teaching has been used throughout this document, as it makes a difference in our educational systems. A focus on student learning implies that the professor is essentially concerned with ensuring that student learning is taking place, as opposed to focusing on "covering the material", which is the traditional concern for a faculty-dominated pedagogy. Students are not homogeneous in their academic formation or capabilities. Most professors assume that all students are generally absorbing the content of the lesson in the same way, as if each student is experiencing the same conditions of learning. This is not the case. Students have different backgrounds and abilities from one area or discipline to another, and they may even have had better training due to specific conditions at home or the school they come from. And of course they have different innate abilities that make them more or less skillful in certain areas. This need not be an impediment for any student to learn a discipline if the proper attention and motivation is provided. When the professor puts the emphasis on learning, he or she becomes a facilitator of the learning process, designs creative, interactive learning environments that guide, allow, and motivate the student to discover the material.

Students become self-proactive-learners who learn to reason, analyze, and discover. The educator takes advantage of the abilities and capabilities of each student to support the learning of others in collaborative learning.

Therefore, as educators, we consider that the role of the professor must change from that of the "conveyer of knowledge" to that of a "facilitator of learning", focused more on managing the learning environment to create processes that enrich student learning. We know that not all students have exactly the same qualifications or capacity to assimilate material at the same pace, nor do they have the same "learning style". The professor should have the ability to make the learning process more effective by discovering the individual capabilities and preferred learning styles of the students and to offer a diversity of learning environments directed at alternative learning styles.

A greater focus on the creation of more sustainable environmental, economic, and social systems gained considerable attention in the second half of the 20th century, with greater awareness of the problems of air, water and land pollution, and the escalating destruction of our environment. This implied that we needed to look at our complex systems from a more holistic perspective. This also means that we need to look at things from an integrated perspective across disciplines, as opposed to taking the simplistic micro focus. Thus, when thinking about sustainable agriculture and natural resources systems, we need to provide a more multidisciplinary approach to the educational process. Moreover, in pedagogy, there has also been a movement to collaborative, cross-disciplinary approaches to learning, to enhance student learning in the sciences, mathematics, and elsewhere. By including the professional thematic areas, such as agriculture, to emphasize the application of theory to practice, students are given a greater understanding of complex topics, and at the same time have a fuller comprehension of their principal areas of study.

An integrated curriculum and collaborative classroom learning, where we combine subjects that are related to each other, enhances student learning. For example, in a course on soil science, faculty members from chemistry, biology, and even economics can participate in the same class and make the subject matter much more comprehensive and interesting. In such a structure the professor interacts with both other colleagues and students. Since most problems are in fact multidisciplinary, the students learn with greater breadth and depth in a multidisciplinary system or integrated curriculum. This also enhances mutual student and faculty respect. Different points of view can be aired and differences resolved through dialogue and scientific evidence.

Experiential and participatory learning methodology seeks to have the students more involved in their own learning, and to encourage students to reflect more on the learning process. By involving students in more participatory learning, they are inspired to apply and think about theoretical concepts in practical situations. This also nudges students toward more proactive learning and enables them to develop higher order thinking skills such as analysis and logical reasoning.

Experiential and participatory learning includes a hands-on approach that involves the possibility of touching and experimenting by themselves in the classroom, lab, field, and community. The student is encouraged to ask, to discuss, and even disagree with the professor, and to be respected throughout a process of comprehensive discussion that is not terminated until he or she is convinced that a correct conclusion has been reached. To achieve this, classroom instruction itself should be designed in a way that is open to and integrates with what lies beyond it – be that the natural world, the built environment, cultivated spaces, cultural elements, or societal mores and constructs. In this way students will learn through direct exposure and interaction rather than exclusively using the traditional blackboard explanation, power-point presentation, or other lecture methods. The classroom then becomes a conduit to the lab, the field, and the outside community.

SOCIAL AND ENVIRONMENTAL ENTREPRENEURSHIP

As mentioned in the introduction, society has promoted an aggressive way of doing business over the years. As we face the challenges the world presents to us, we have to realize that success in business is not based solely on material goods, nor is it a matter of us versus them. Of course, being financially viable is a very important goal, but it has to be achieved by promoting better conditions of life for our workers and the community, without destroying other businesses as we do now in an overly competitive world. Rather, we should create opportunities for other businesses to grow together – i.e., we should create win-win opportunities.

Universities should promote "business not as usual". By that we mean we should encourage the creation of businesses with social, environmental, and ethical responsibility, in correspondence with our values.

About 30 years ago, EARTH was founded on a property in the middle of the rainforest of Costa Rica. Rainforests comprise around 7% of the earth's surface, but contain between 50% and 80% of its biodiversity. The property of EARTH University consisted of around 8,000 acres and was chosen purposely to carry out research and to educate students on how to live and produce in harmony with the rainforest.

At the time EARTH was established, deforestation in Central America was about a million hectares per year – a very alarming figure. This high rate of deforestation was also found in other regions of the world. There were also high levels of contamination and soil erosion, high levels of toxic chemical use to control pests and to enhance soil fertility, and production practices that challenged the appropriate use and stewardship of our land. So the challenge to EARTH University to train professionals in more sustainable agricultural systems, to reduce deforestation, and to foster more sustainable management of our forest and agricultural lands was great. EARTH was faced with the double challenge of developing more sustainable and socially positive agricultural systems while simultaneously involving its faculty and students in the discovery and learning process. Our task was to create systems that were environmentally, economically, and socially sustainable, and to set an example that could change the mindset of our students, faculty, and businesses.

The Cold War was continuing, and the hot spot of the conflict was Central America, where the Contras were fighting for power in Nicaragua. Political violence was also present in El Salvador, Guatemala and Honduras (the country where the Contras had their base). South of Costa Rica in Panama, President Noriega had his own problems with the USA. Under these circumstances, the two rival superpowers, the Soviet Union and the USA, were each pouring financial resources into the region to promote their political ideologies.

Costa Rica, a country of peace that had abolished its army, was at the time under the presidency of Don Luis Alberto Monge. President Monge was the youngest person of the

government coalition which had abolished the army in 1949. When the opportunity came in the 1980s to receive assistance from the USA to support Costa Rica in the difficult conditions Central America was experiencing, President Monge accepted the help but insisted it should be for education. He believed it was only through education that we could achieve peace and harmony in the world.

President Monge and the other founders of EARTH, who included the President of the Kellogg Foundation, Dr. Norm Brown, were key to convincing the U.S. Agency for International Development to invest in the creation of a university rather than in arms. Not only that, but the founders insisted on establishing an institution whose mission was to create ethical leaders – individuals who would be committed to the wellbeing of society, the protection of the environment, and caring for those who were most disadvantaged, in order to create a new global order. It was a dream in which they believed and which gave the leaders who founded this institution a clear mandate to make a positive difference though education.

This historical context gave rise to the mission and the vision of this new university, and a total commitment for all of us to be part of a transformational experience in higher education.

So, did we know how to achieve this vision? No, we did not. We had to learn, explore, and experiment, and seek ideas and innovations from leaders in agricultural education from outside. We had the support of a group of external universities from the USA, and leaders in education from as far away as New Zealand. We became schooled and educated on student learning styles, on experiential and participatory pedagogy, and new innovations being practiced in other parts of the world. We also deliberated on how to reach the most disadvantaged students. The traditional entrance exam was not an option. We also wanted to learn how to promote leadership and to educate a professional with values, and we were not ashamed to say that the greatest values are love and the truth.

THE EARTH UNIVERSITY MISSION AND THE REALIZATION OF ITS EDUCATIONAL MODEL

"To form ethical leaders for sustainable development and to construct a just and prosperous society"

This mission statement was accepted in 2003 after several earlier versions were rejected. Finally, we all agreed – Board of Trustees, faculty, staff and students – and it has guided the institution until today. Based on the mission that we defined, we began this experiment to build an innovative educational model. So how did we address the five challenges mentioned above? Let us go through them, one by one.

OPPORTUNITIES FOR ALL

We considered it essential that admission to EARTH University be open to candidates from the rural communities as well as the city; to those with clear experience, knowledge and dedication to agriculture and to those with a new vision for the future and a commitment to their communities and families, without penalizing candidates because of their educational and economic limitations. We considered that admission should not be based on the capability to pay, or only on performance on standardized exams. We wanted to find a new way of evaluating and choosing those candidates who had the greatest likelihood to succeed in an intensive, multinational, learning environment, isolated from large population centers, where students and faculty would become part of a learning community. The first group of students needed to have the capacity to become active learners, to contribute to the creation of their university, its systems and infrastructure. We called this first group "pioneers" because they were going to build the university together with the leaders, faculty and staff that arrived to embark on this adventure.

It was not initially clear how we could address the task of providing "opportunities for all". We had long discussions with academicians from different universities, and especially from the USA Support Group. We always ended up discussing the entrance exam as the major tool used by universities to choose their students. Eventually we decided to use the SAT exam developed for Latin America, as it provided the only measurement that we could compare across different educational systems, countries and cultures. However, we were not satisfied that we should use this as the primary admission criterion. We decided it should act as a minimum filter, a minimum exam score being a necessary condition for success, but not a sufficient one.

Then we pondered on how we could identify and evaluate the other factors which are critical for success, such as drive for learning, commitment, intelligence, knowledge, and dedication to the profession. After several days of discussion we decided to experiment by going out to look for our students in rural areas of the countries of Latin America, from the agricultural and technical high schools, searching for students who would have normally been overlooked. And we assigned our faculty and academic leaders this responsibility, to go interview and recruit every single candidate by attempting to identify those outstanding future leaders who deserved an opportunity. We began this experiment the first year by visiting every Central American country, asking permission and seeking advice from the ministries of education regarding where to locate those schools where we might find students who wanted to go to university but might not have the means to attend.

One of our first decisions was to include the faculty as an integral part of the admissions process, given that the faculty knew best what qualities the students needed in order to become successful. By involving the faculty in the decision making on admissions creates buy-in and a greater commitment by them to ensure the success of the students who come to the university.

But before we could go out to seek deserving students, it was necessary to clearly define the desirable characteristics or profile of this ideal student that EARTH wanted to recruit. First, we were looking for individuals who had the right values: honesty, respect for others, teamwork, leadership, and community engagement. We looked for students with clear and demonstrated experience and commitment to agriculture and their communities. We wanted youth with these characteristics, and with the drive and practical intelligence to become active learners who could overcome academic limitations they might have. And we wanted to find young people with innovative ideas about how they could contribute to improving society and their rural communities.

The entrance exam we gave was the same SAT used in the United States, but in Spanish. This test was produced by the College Board in Puerto Rico. Therefore, the exam was mailed to us, but we had to send the answer sheet back to Puerto Rico to be graded, and later they delivered the grade to us. The entrance exam gave an idea of the academic preparation of the applicants. But it was not necessarily the grade that would decide if a student was qualified to enter EARTH or to receive financial assistance. The exam provided a filter, a minimum level that a student should have to be successful, but the final decision was not based on this criterion alone. We combined it with the results of the interviews, recommendations, and high school academic performance. And the interview quickly became the most important criterion for a final decision.

The first recruitment experience was a trip that Provost Dr. James French and I took through Central America by car in 1989. The region was in conflict, but we were able to travel all the way from Costa Rica to Guatemala, passing through war zones, visiting technical high schools and others, interviewing faculty and students in the most remote areas, and obtaining very impressive results. We began to understand the background of our future students and their educational achievements. We visited high schools that had never before been visited by faculty or other representatives of universities in their own countries.

We later traveled by car through the southern part of Costa Rica and all the way to Panama, where the conflicts with Noriega were starting. The first trips in Central America provided us with the early applications, which we received from the areas we visited. Three months later, we went back by car and interviewed the students who had applied.

We administered the exam and interviewed each single applicant in a group setting as well as individually. Based on the interview and exam results, we chose our first group of students, who became our "Pioneers". Some of the students admitted had low entrance exam scores, but they impressed us very much in the interview. We discovered aspects of their living conditions that we would never have imagined by looking at an entrance exam alone. For example, we found out that some students had to walk several hours to get to class and back home, and they had no electricity at home. Yet still they were able to make it (with some

difficulty) thorough high school, and on top of that they participated in community activities. We learned about their dreams, their values, their contributions to the community, and their experience with and dedication to agriculture. Their dreams included improving their own and their families' lives, and those of their communities. We knew this commitment and drive to improve would be more important than any limitations reflected in exam scores on an exam with which they had no familiarity, no practice taking, and that did not fit into their previous experiences or skills.

The students chosen were selected with care, and were perceived by the faculty to have the motivation to make a special effort to succeed in their studies. With time, this first class showed us that the investment of time and effort made in the admission process was justified. We provided all of them with partial or total financial assistance, without which they would never have been able to attend. We invested resources that we had saved from the construction of the campus to provide this financial help. We trusted that if we achieved success with this group, we would be able to convince donors that this was an effort worth supporting. This was a risky decision, but we were sure that donors would understand and want to support our educational mission and similarly deserving students in the future. We were proved right. Based on this first experience we continued the admissions process in this manner in the future, using the same criteria.

Seventy percent of EARTH students are provided partial or full scholarships. The student graduation rate after 4 years is 84%. As graduates, most of them hew closely to EARTH's mission. Today there are students from over 45 countries, mainly from Latin America and sub-Saharan Africa. Most of the graduates return to their home countries, though many first go on to graduate studies. They participate in politics, and they become leaders in the private sector, government, and their communities, continuing to follow the values and mission of EARTH in their day-to-day work. They are realizing the vision that we dreamed of, at home and around the globe, contributing to a more sustainable, socially responsible world.

EDUCATING ETHICAL LEADERS

Our role as educators is to emphasize student learning. We wanted to make sure that the student is the center of our attention. This does not mean that research and community engagement were left out. On the contrary, these activities became an important part of the learning process. We incorporated them into the daily process of learning in the same way we integrated the courses in the curriculum. Practical research and interaction with the community were incorporated as an integral part of the student's education.

In the process of forming leaders through experiential and practical learning you must provide opportunities for your students to assume leadership roles as part of their learning. In the EARTH educational process, the student takes on leadership responsibilities in different curricular and extra-curricular activities. For example, when the professor is going to start a course, he or she shares the material with the entire class and allows the students to give their

opinions about the content to be taught. The students have to justify their opinions. They may disagree with the professor, but they have to state the reasoning behind their argument. The professor allows enough time for discussion and encourages everyone to participate in a respectful manner. Once the discussion is over and everybody in in agreement, the professor starts the course with everybody clear about the purpose and reasons why the various elements of the course are important.

Students are expected to work as teams, engaging in collaborative learning in the classroom or in carrying out collaborative projects. As team members, leadership alternates among the members of the team, depending on the circumstances. The professor may assign students this responsibility, or at other times the students will decide who will coordinate these tasks, and who will provide leadership over which part of the action. Leadership responsibilities are designed into the curriculum at various points, whether in field work as teams, in their entrepreneurial projects, while working in the community, or in their practical work experiences, where fourth year students lead teams of students from the first and second years. Also, students take on leadership in extra- curricular activities through student government, student clubs, and on special events such as EARTH's International Fair, which is always led and managed by the fourth-year students.

As a primary example of the development of leadership skills, during the four years of studies, field trips are programmed by the faculty for the entire class or as parts of individual courses. Students are assigned leadership responsibilities as the coordinators of these educational excursions, where they must, in collaboration with the professors, identify and decide on the destination, define the purpose of the trips, as well as suggest the practices and topics to be analyzed in accordance with the course objectives. They also coordinate with the contacts and for the preparation of food and transportation. Then they work with the professor to evaluate and reflect on their learning at the end of the trip.

Another example is the practicum, required of all students each year and for which they spend one day per week in the community or in field work on the campus property. The senior year students, as part of this professional experience course, are assigned to coordinate and lead the first, second, and third year students in work experience modules in the academic farms or with farm families in the surrounding communities, as the leaders of the different groups that are formed. They are responsible for coordinating and working closely with the course professor, with the field unit coordinators, and with the community members, farm families or other community actors to ensure the success of the work. At the end of the semester, they are provided feedback on their leadership capabilities and performance through an evaluation by their students as well as by the professor responsible for the course.

Also in the third or junior year, students go off on an internship with a commercial enterprise, NGO, or other non-academic organization. Some go to their home countries, but others select further-flung destinations. This internship lasts three months, and the student is responsible

for finding and arranging it. They work under a supervisor at the commercial business or other site, and they must perform to a high standard satisfactory to their employers. At least once during the internship, students are visited by their faculty supervisor. Students also must develop and carry out a community service project to benefit the community as part of their internship. This is solely their responsibility. At the end they are provided feedback and evaluated on the internship and their leadership on the community service project by their intern supervisor and a university professor. They share their experiences, what they have learned, and what they could have done better with the faculty and fellow students when they return to campus.

There is also a course called Entrepreneurial Projects, which extends over a period of three years and requires the students to create a business with a group of other students. This begins during their first year and continues through part of their third year. The students choose who to team up with, they choose their project, and they work together to carry it out. This is a prime example of students working together, and taking leadership at different times under different circumstances. They must develop a Board of Directors for their business, and at the same time divide leadership responsibilities for management, finance, marketing, accounting, and all the other details of putting their project into operation. They learn from the feedback they receive from their business partners and colleagues, and from the results that they achieve. And a focus on ethics and conflict resolution is designed into this experience, as they must define the values of their business, and how they will ensure that ethical decision making and evaluation will be assured. In the fourth or senior year they are required to carry out a research project and defend their findings as a prerequisite for graduation. All these experiences strengthen their leadership capabilities.

A final example of how ethical leadership skills are developed and refined is the International Fair, which as noted above is coordinated and managed by the fourth-year students. Significantly, any monetary returns from the fair go to cover the costs of parents to attend the graduation ceremony of their sons and daughters. Every year, at the end of the fair, the third-year students take over responsibility for the fair the following year.

They divide leadership, organizational, and management responsibilities, including promotional development, finance, construction of stands, health, waste management, entertainment, food, and security, among other things. Over ten thousand people arrive for this fair over a two-day period. Food is offered from the countries represented in the student body, which means that country health standards for food management have to be ensured. The entertainment involves organizing music and cultural performances by the students, but also big bands are invited from outside the campus. All of this is in the hands of the students, with the support of faculty and administrative staff. But students take the decisions at all points of the process, seek support and advice when necessary, and must resolve all problems they encounter, before, during, and after. This is probably the best opportunity for the EARTH students to refine and put to the test their leadership skills through a real-life activity.

VALUES-BASED EDUCATION

Values are what we are all about. Although I was very familiar with the importance of values within the university, it was not clear to us how the defined values were to be emphasized or incorporated as part of the educational model and life of the university. This is probably the case in most universities. How do we promote, emphasize, and ensure that values are known, recognized and shared by everyone? Official documents normally express every university's values and ethics, but their implementation is rarely given proper attention.

Values such as honesty and respect may be taught in courses, but that does not mean that they will be assimilated by the student. Therefore, if we mean for students to truly learn essential values, and to assimilate them, they must be emphasized across the institution. The essential values that are important for future professionals should be defined by the university, adopted as part of their institutional code, and promoted across the university and incorporated in faculty, staff and student manuals on ethics. Values such as honesty, integrity, equality regardless of ethnicity, race or religion, and sustainability must be communicated on a regular basis. And by behavior and performance, students will learn that these are important, and assimilate them by watching their roles models – the faculty, university leadership, researchers, and staff, all of whom must practice these values in their everyday professional and, hopefully, personal lives.

Having said that essential values should be clearly defined and communicated in any educational institution, we cannot underestimate that the most important influence in values comes from the student's family and their upbringing. Academic institutions have to reinforce those values across the curriculum and in each action or decision that the university takes. We cannot teach respect if a professor, or even a classmate, makes fun of another student or person. The professor has to stop the class or the activity and make clear that such behavior is not allowed in the university. In other words, there must be a code of conduct where those main values are highly respected and followed. If someone has excellent grades but fails with behavior that is contrary to the essential values, the person should be called out and required to change their behavior. The code of ethics, which includes behavior based on the values of the institution, may implement penalties that might include failing a class, suspension, or expulsion in the most serious cases. Universities typically include failure of a course if a student cheats on an exam or plagiarizes a paper. But what about other forms of dishonesty, bullying, racist acts, among others. All essential values that are of importance to the university and society must be reinforced if we expect to graduate ethical professionals and leaders.

The need to learn and live the values mentioned above, along with social and environmental respect, is more important than ever at this time. This is where we should not be afraid to talk and teach the greatest value of all: love. Love opens your heart and your mind to be generous, respectful, forgiving, honest, and to strive for a society of peace and justice. For some reason, love is a word we refuse to mention in education and business. It is almost shameful to mention it in speeches or arguments. However, throughout history individuals who have

changed our history for good have done it with love. Whether you believe in religion or not, one realizes that love has been the driving force behind those who have been positive agents of change in history.

These are the kind of values that were and still are practiced at EARTH University. The basic values are written into the mission of the institution and practiced in every activity on campus, from the classroom to the dorms, from the cafeteria to the sports field, and in any informal or formal activity. After four years living on campus, the students become convinced of the values that they must follow in their professional and personal life.

We worked with all of the university stakeholders at the beginning to define the values that were to guide the institution. These were written up and distributed across the university. They were incorporated in the personnel, faculty, and student handbooks. All new employees had a session on university values as part of their orientation sessions. And employees were given a reorientation session every five years, where the university values were given center stage. Faculty incorporated these as part of their courses. Students had to define and incorporate their own values within their entrepreneurial projects in line with the institutional values. Ethical behavior based on these values was incorporated into courses, work experience, community engagement activities, internships, and other activities. Students are required to make explicit all values related to all their major activities, such as the International Fair and Student Life. The results of this are clear signs of a cohesive messaging and behavior that is often commented on by visitors to the university, from the greeting received from the EARTH University drivers and the security personnel at the front gate, to the secretaries, field staff, and cafeteria workers. The message has always been consistent and clear.

Of course the most important results are given expression by the EARTH University graduates. In a survey done in 2019, the graduates recognized values and ethics as the most important thing that they learned at the university to benefit their professional careers and their personal lives. Here are a few anecdotes.

EARTH graduates all over the world are committed in their work and personal life to be the ethical leaders the university has inspired them to be. We have hundreds of examples of those leaders in different countries. In Ecuador, the Minister of Agriculture is an EARTH graduate and his agricultural program reflects clearly the EARTH mission.

Francis Nimikunda from Uganda, who came from a poor rural family, was able to go back home and establish an elementary school where he enrolled around 250 girls and boys who otherwise would not have had an opportunity to receive an education. He decided to do this while he was a student at EARTH. His classmates supported his efforts by providing financial aid to the elementary school.

José Antonio Pacheco is an indigenous man from Guatemala who came to study on a scholarship from the Kellogg Foundation. Without the scholarship, he would never have been able to go to college, but José Antonio obtained his degree and returned to Guatemala. After saving some money, he established a company that sells organic fertilizers and agricultural implements, becoming a very successful entrepreneur and one of the largest exporters in Guatemala, with branches of his company in several Latin American and African countries. He employs people from his community, provides fair salaries, and has also employed EARTH graduates in several countries. His business is socially and environmentally sustainable. He provides funding for people of his native town to go to school. Most importantly, he is a role model for ethics and values in business.

EARTH graduates in Ecuador have formed a company where they created the largest fair in Latin America for sustainable businesses. Every year, thousands of ideas for start-up companies are brought to Guayaquil, where a jury of banks and investors assesses their initiatives. The best ones are recognized with the Latin American sustainability award. There are also potential investors present so that as many as possible of these good ideas may have a chance to be supported. The criteria for awarding the prize include respect for society, environmental sustainability, and the ethics of the business plan.

Pablo and Hazel Céspedes are EARTH graduates who married and started a small cocoa farm in the western part of Costa Rica. After some years they now also process the cocoa and give cocoa tours to tourists. As part of the social commitment of their business, they hire people from the local community, help improve the rural school where they sent their children, and have become a very positive force for the whole rural community. They have won awards in different parts of the world for the quality of their products. They also have several cabins where tourists come and enjoy the cocoa farm, which is totally organic and sustainable.

These and many other graduates exemplify the ethics and total commitment EARTH graduates have for making the core values of the university part of their lives and the lives they affect directly and indirectly. There is no doubt that our graduates have become agents of change, making a difference wherever they are. If all universities around the world could make the effort to systematically integrate values across the university, the world would be a better place.

INTEGRATED, EXPERIENTIAL AND PARTICIPATORY LEARNING

EARTH University was created with the vision that it would not be your traditional lecture-based educational institution. Experiential and participatory learning were to be at the core of the educational model practiced at EARTH, for all courses. And given the complex nature of agricultural systems and the multidisciplinary nature of the challenges it was and is facing, it was decided that an integrated approach would be taken to its design and structure to ensure enhanced learning and understanding by the students.

At the time that the university was being designed, we were guided by our previous training and experience on the complex, multidisciplinary nature of the challenges confronting agriculture and the natural environment. We were convinced that these challenges should be approached and resolved in an integrated, multidisciplinary manner. Usually most problems that we confront are complex and have a multitude of factors influencing the situation. Historically, the scientific method approached problems by breaking them down into their simplest components, and focused on these, usually from a specific scientific perspective. But in reality, most problems are more complex than this and greatly benefit from a multidisciplinary approach to understanding and problem solving. This is particularly true when we look at the issue of creating more sustainable systems.

For this reason, we decided that the EARTH University learning system would benefit from a multidisciplinary approach. We determined that students needed to look at agricultural systems from various perspectives, and this meant that the faculty also needed to share this same approach in and outside the classroom. It was also decided that the STEM (Science, Technology, Engineering and Math), business, and communications courses should all be taught with a focus on application to agriculture and natural resource management to enhance learning of these other essential elements.

Based on this philosophy, whose benefits have been demonstrated in several pedagogical studies, we decided to treat the faculty as a single unit organized around the learning program, as opposed to being organized by discipline. The professors from the individual disciplines were strategically placed in different buildings to encourage interaction among peers from different disciplines. The same principle was practiced in classes, where faculty collaborated in their courses with professors from other disciplines to reinforce learning on complementary topics. For example, a professor of soils could have in his class a professor of chemistry, and when the soils professor talks about soil pH, the chemistry professor explains the chemistry of acidity or alkalinity. The same would be done teaching the economics of animal science, with the professor of economics collaborating with the soils professor on the agrosilvopastoral systems or with the forestry professor. The idea of placing faculty from different disciplines in the same building facilitates multidisciplinary discourse and collaboration because of their physical proximity, and thereby promotes greater coordination in teaching.

The experiential and participatory pedagogical approach is known to enhance learning and is a recommended alternative to the traditional university lecture. The professor creates the setting for the student to discover knowledge. The professor becomes a facilitator of the learning process by motivating and encouraging the students to work, think, and discuss in groups as they seek a greater understanding of and discover the answers to the topics to which they are being exposed. In this process the student is at the center of the learning system. This system gives the professor the opportunity to motivate the students and to discover weaknesses and deficiencies, or special capabilities of, the students. The instructor can then help those who need more support and capitalize on the strengths of those more skillful in

certain areas. This creates a support system that encourages a healthy win-win approach, as opposed to fierce competition, that is so important for harmony and happiness.

Many active learning techniques can be implemented as part of classroom learning, such as collaborative learning, group projects, group discussion, among many others. We also understood from the beginning that classroom activity must be complemented with practical experiences. The architectural design of the classroom was done in such a way that practical demonstrations and hands-on work could be brought to the classroom. The classroom becomes a door, a kind of intermediary between the theoretical and the practical outside the classroom, to the lab, the field, the community and beyond.

The curricular design requires students to have about 50% class experience and 50% lab and field experience. This is very important in the learning process: in order to master knowledge, you must experiment, touch, feel, learn to fail, and stand up again, all as part of the educational process. Agricultural and natural resource classes include class time and field time. Science courses include laboratory time. However, some courses are designed as full-time field courses, such as the work experience course offered during the first three years, and the professional experience course during the fourth year. In the latter course students spend two half days a week in programmed field activities and one day a week in community engagement experiences that include working in the community, on farms, or with families. During the professional experience course, the fourth-year students supervise the modules of the more junior students.

Several courses were designed as signature courses of experiential learning, and they included the work experience course mentioned above, community outreach as part of the work experience course in the third year, the internship mentioned earlier, the entrepreneurship projects course which will be explained in more detail in the following section, and the fourth year professional projects course which typically focuses on designing and carrying out a practical research or development project under faculty guidance during the student's fourth year. Each of these provide the student the opportunity to put theory into practice in a meaningful way to enhance student learning beyond just learning theoretical concepts.

SOCIAL AND ENVIRONMENTALENTREPRENEURSHIP

During the original design of the curriculum there was a proposal for a course called entrepreneurial projects. When we enquired of the persons who had put this idea forward what was meant, they explained that the students would have a project that they would be responsible for, such as taking care of pigs. It was clear that, although a good idea, it was focused more on practicing production skills rather than acquiring the business skills that were expected from the original vision for the EARTH University graduates.

As agriculture has become as much a business activity as a food production activity, graduates should learn the skills necessary to successfully create and run a business, beyond the technical

production components. They need to understand markets as a driving force, finances, budgets and cash flow, and how to evaluate the potential of a business.

However, given the importance of building social and environmental awareness, these key values must be incorporated into the entrepreneurial model as well. The question was how to build viable businesses that are beneficial to society, respond to community needs, and that create and build value through products that are environmentally friendly and sustainable. So like everything we did during the creation of the EARTH educational model, we began to experiment.

We came up with the idea that the students should create a business with a team of classmates. To reinforce cultural sensitivity and appreciation, the team members were to be chosen by the members, but they had to include students from different countries and economic backgrounds. Each business had to come up with their name, and decide where they would invest their loan. They would structure their business, choosing a CEO, head of finance, markets, and production. They would have to develop and defend a business plan before they would receive their loan and have their business idea approved. This would require that they explore and analyze market opportunities, evaluate prices, and assess quality requirements. They would have to develop budgets and analyze the finance of their business based on the potential risks, market prices, and opportunities. They would be required to carry out an environmental impact study and, if necessary, they would be taxed on any environmental costs associated with their project.

They were then given the loan and spent the next year carrying out their project, including production, processing, marketing, accounting, everything. At the end, when they sold their final products and liquidated, they would have to pay off all their expenses, loans, interest on the loans, and environmental taxes. Finally, they would have to compensate themselves for their own labor put into the project. Then, if there were any positive returns, about 25% was taken to reimburse the investment pool from which their loans were provided. This last step served to subsidize any projects that were not totally successful, and in fact lost money. Any remaining funds would, of course, be profit. It is important to mention that the original investment fund has grown over time because the majority of the projects have been successful. It has never been depleted.

Of course, complementary to the entrepreneurial projects, are the theoretical courses. Courses are offered in business plan development, markets and marketing, finance, accounting, and business management. Each theoretical course is offered at the appropriate time of project development and implementation to equip the students with the theoretical tools necessary to successfully develop and carry out their project.

Also, it is important to stress that each enterprise had to develop a vision, mission, and value statement for their project. This included social awareness and sensitivity as well as sustainable

and environmentally friendly systems. Projects which demonstrated these characteristics are rewarded. Also, projects with these themes are encouraged as part of the market development and analysis.

The Entrepreneurial Projects course has become a key component of the educational model of EARTH University. It creates learning in a key area for graduate success and integrates well with many other areas of the curriculum, including courses in agriculture, natural resource management, communication skills, and values and ethics, among many others.

CONCLUSION

Higher academic institutions can change the world by forming the ethical leaders the world needs. In recent years we have seen how the world has changed. Indeed, we have advanced at a very fast pace in science and technology. However, we have not advanced enough in our way of seeing ourselves as a society that is harmonious and fair with one another. We have to change, and the change depends on the leaders that can guide us for the good of humanity.

The corona virus has shown us that we need very efficient leaders, not only in the political arena, but also in the private sector. In some instances, we have failed to act quickly and in a coordinated and supportive way to control the pandemic. In this critical time we can show (or not) how we care for one another, and how we should protect the environment and really value what is important in life. This is a lesson that we all need to learn as the foundation for instilling reverence for these values in the youth in our educational system.

We need ethical leaders who will take us to a world of peace, harmony and, above all, love. Our educational systems can and should **promote** this change.

About the Author

Prof. José A. Zaglul *is the President of the Global Confederation Associations for Agriculture and Life Science (GCHERA). He is a Trustee of the American University of Beirut and a Member of the Ad Astra Rocket Company Board of Directors. Previously, He was the President of EARTH University and the former head of the Animal Production Department at the Center for Tropical Agricultural Research and Training (CATIE) in Costa Rica. He holds honorary degrees from Chatham University, Cal Poly, CATIE (Centro Agronómico Tropical de Investigacion y Enseñanza), the National University of Life and Environmental Sciences of Ukraine and a Distinguished Alumnus Award from the University of Florida. He holds a PhD in Animal Science from the University of Florida and two Master's degrees in Food Science and Human Nutrition and Animal Science.*

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