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# Entrepreneurial Education and Business Development Built into Training





# Foreword

The American University of Beirut (AUB), in partnership with the Global Confederation of Higher Education Associations for Agricultural and Life Sciences (GCHERA), EARTH University and the W.K. Kellogg Foundation has launched a project on “Transforming Higher Education”. This project seeks to share five Key Elements of Success practiced by EARTH University and others with universities in Mexico and Haiti, and across GCHERA’s global university network over a period of three years between July, 2018 and June, 2021.

The goal of the project is to advocate for the education of future leaders with the commitment to serve society—leaders capable of positively affecting changes in their environment, promoting peace and understanding, and respecting diversity while contributing solutions for the major challenges of the 21<sup>st</sup> Century. The project’s purpose is to encourage and facilitate change processes within the university as well as to promote greater university engagement with the larger community to achieve the twin goals of producing future leaders and change-agents, as well as fostering greater prosperity and equity in society.

This publication is one of a series of five papers that present Key Elements of Success the project seeks to share and which, taken together or individually, can contribute to facilitating university transformation processes. These five elements are considered fundamental in the successful education of leaders who will be prepared to offer solutions to the diverse and complex challenges of feeding an ever growing and more diverse population sustainably, mitigating and adapting to a changing climate while also contributing to the economic well-being of our communities. This requires leaders with strong ethics and values as well as solid grounding in theoretical knowledge and practical skills necessary to provide the technical, environmental and socially sensitive solutions required. The five Key Elements of Success presented in the series of papers are experiential/participatory education; community engagement; training in entrepreneurial education and business development; ethical and value based leadership; and decision-making and conflict resolution.

Three additional factors which enhance the impact of the five Elements of Success should be considered as well. The first is the role of the university professor as a facilitator of learning, the second is an explicit recognition that the five Elements of Success should permeate and be reinforced across the university educational system, including both curricular and co-curricular activities and programs and the third is the need for policy changes which are essential to their success.

The traditional role of the university professor as the repository of knowledge is increasingly being questioned. An educational system featuring the Key Elements of Success envisions a role for the professor as one who guides and facilitates student's learning through discovery, self-directed learning, analysis, reflection, group interaction, among others. The responsibility of the professor is to create a stimulating learning environment and provide students with real life opportunities to observe, develop ideas, apply theories, implement solutions and learn from the results. Rather than focusing on "covering the material", professors should be concerned with students learning on multiple levels, including problem solving and analytical skills, self-confidence, teamwork, personal relationship skills among many others. Professors should be recognized and stimulated for their innovations and contributions as "Facilitators of Learning". The professor's commitment to participatory education, to learning with and from the community, to providing continuous feedback and support requires time and commitment far beyond the delivery of lectures and supervision of laboratory sessions.

In addition to the changed role for the professor as the facilitator of learning, the entire university must be committed to the learning system oriented towards the five Elements of Success. As the five essays make clear, each element of success goes beyond the traditional classroom and involves everyone on campus and beyond, including community members. Participatory and experiential learning occur in the community, on farms, as part of research activities and as part of the university's commercial undertakings. Ethics and values are not just discussed and analyzed in the classroom but must be key features of the university environment, embodied in institutional policies and consistently demonstrated by university administrators, faculty, staff and students. The effective resolution of conflict is an acquired skill requiring systematic evaluation and analysis and should be actively practiced in relations between faculty, staff, administrators and students and well as between the university and the

larger community. Team projects in classes provide a fertile environment for fostering skills in resolving conflicts, as do co-curricular activities. The University engagement with the community involves administrators, faculty, students and staff as does the inclusion of entrepreneurship within the curriculum. Each of the five areas are complementary and reinforcing.

The successful integration of the elements of success will frequently require policy changes, and in many cases a rethinking of the university mission and vision. The education of leaders requires creating a student focused learning community and the university policies need to promote greater faculty, staff and student engagement with the community; student driven learning where students take on more responsibility for their own education; student led business ventures; student supervision of research, and other initiatives. Policy changes may involve changing study programs, institutional access by visitors from the community, student access to laboratories and fields, as well as the level of responsibilities given to students to reinforce their learning. University policies must recognize and reward the new role of the professor as the “Facilitator of Learning” as a valid and viable road to advancement within the University Community. Therefore, it is critical to consider policy changes to ensure any successful university transformation process.

We hope that this series of documents will be helpful to your university as you engage in a process of transformation. Please take them as an invitation to open a dialog and stimulate discussion to enhance the university transformation process<sup>1</sup>.

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1 What is written in this series of documents represent the views of the authors and does not necessarily represent the thinking or vision of American University of Beirut, GCHERA, EARTH University or the W.K. Kellogg Foundation.

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**Ph.D. Irene Alvarado<sup>1</sup>**

## Introduction

The new millennium is characterized by the presence of unprecedented challenges: climate change, depletion of natural resources, scientific-technological knowledge, artificial intelligence, and (local, national, and regional) financial interdependence have fostered the development of global value chains and a shared economy, albeit under pressure from growing world population, migration, and urban development. These challenges are transforming not only people's way of living and communicating but also the way businesses perform their activities, forcing them to become more productive and competitive. This entails a need for having a more specialized and flexible workforce.

Therefore, entrepreneurial education plays a key role on account of its goal of training young people for the work environment, and it should provide students with the competencies they need to become active and responsible citizens committed to developing their country, community, and environment, while being socially and environmentally responsible.

Entrepreneurial education brings about students' ability to influence the future, understand multidisciplinary interactions, anticipate the short and long term, set clear and purposeful goals, and foresee the consequences of their actions. Upon graduation these students are capable of injecting new businesses into the economy, thus creating jobs, promoting competition, and encouraging innovation. Startups are particularly responsible for developing breakthrough innovations generating entirely new markets or substantially disrupting existing ones, finding new untapped opportunities or innovative solutions to a variety of problems. Additionally, entrepreneurial education has been shown to be a powerful integration tool since collaborative work

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breaks down barriers based on social class, age, gender, sexual orientation, and racial differences. Moreover, entrepreneurial hands-on experiences in teams give rise to collaborative work, respect, and tolerance, which build critical thinking, problem solving, and resolution of any conflicts that might arise.

This paper reviews entrepreneurial education's importance starting with a brief historical background and thoroughly introducing EARTH University's Entrepreneurial Program, its relevant issues, and different achievements. It also includes examples of worldwide experiences based on this model, and reflects on lessons learned.

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## **Theoretical Background**

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Entrepreneurial Education has gone through various methodological approaches, from Ignatius of Loyola's "Traditional Education"—characterized by a standardized teaching-learning process and the role of teachers as knowledge transmitters—to the current methodological approach based on the development of competencies under an inverted curricular model, where education focuses on learners, who become active builders of their own knowledge (Anses Munte, 2015).

There is historical evidence of efforts made since the nineteenth century to train businessmen. It was not, however, until the seventies that education for entrepreneurship became typical of United States business schools, from which the model has been taken and implemented in other regions throughout the world (Shane, 2000; Jordan et al., 2014).

Entrepreneurial Education and Training are formal academic education and training programs. While both are meant to develop entrepreneurs and entrepreneurial activities, they differ in terms of specific objectives. By and large, formal education tends to focus on gaining knowledge about entrepreneurship, whereas entrepreneurial training programs—usually conducted outside the formal education sector—are targeted on providing the skills required to start a business (Sherrard and Alvarado, 2017).

Broadly speaking, two teaching approaches to entrepreneurial education can be identified: the Management Model, which focuses on the know-how to set planning, organization, and control goals in a small business (Winslow et al., 1999), and the Business Venture methodological approach emphasizing



business plan development (Rideout and Gray, 2013). Most programs offered by higher education institutions, however, are found within the Business Management and/or Economics school, which limits the opportunities for students from other disciplines to gain this kind of knowledge (Shane, 2000; Sherrard and Alvarado, 2017).

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## **EARTH University's Entrepreneurial Program**

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The Entrepreneurial Program is a fundamental building block of EARTH University's educational model where students, during a three-year period, are actively involved in creating and starting a commercial agricultural business, while enrolling in learning modules where they acquire the tools required to develop and implement a business activity. Modules provide the knowledge and both theoretical and practical skills underpinning students' work on their business project by integrating technical, economic, environmental, and social aspects of business management.

At EARTH, the typical curriculum is methodologically "inverted", unlike other curricula based on a reductionist vision where students begin their education focusing on system components (biology, chemistry, physics, etc.), the process at EARTH starts by focusing on the whole system and underscoring a holistic view of agricultural production and natural resource management. Students are faced with the complexity of a farm production system and the role played by people and their environment since their earlier days at the University. As they advance in their studies they increasingly pay more attention to parts of the system, but without losing sight of the whole (Sherrard and Alvarado, 2017).

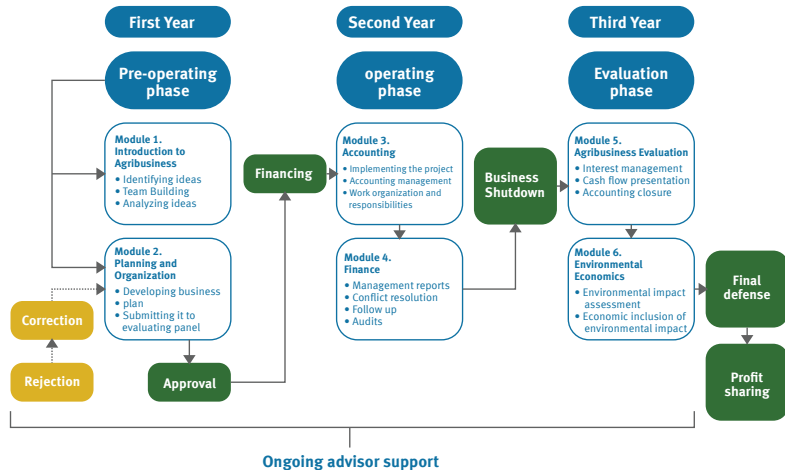
The strength of the "inverted" methodological model is that students live and experience the social, technical, environmental, and business realities of production from the very beginning of their education, which provides a context for building knowledge as they go. This approach also offers a significant training closely related to the reality of the field where they will work. Students are thus expected to create a business right after beginning their education at EARTH and choose a business idea they should implement before being introduced to basic management concepts (Sherrard and Alvarado, 2017).

A critical feature of the Entrepreneurial Program is that students receive modules in such a way that the subject matter is relevant to the particular stage of their business project development. For instance, if a student is organizing her project with 4 or 6 classmates, the Planning and Business Organization theoretical model will address the different types of business organization (Sherrard and Alvarado, 2017).

The program considers conveying knowledge through six 15-week modules including both theoretical and practical components. During this period of time, students and their teams should continuously (even during holidays) devise, plan, implement, market, and control their business venture, among other things, from the first through the third academic year.

Figure 1 shows in detail the way the teaching process is carried out in three phases throughout the program and how the activities correspond to the learning modules:

- Pre-operating phase
- Operating phase
- Evaluation phase.



**Figure 1. EARTH's Entrepreneurial Program implementation process**

The pre-operating phase includes building the business team, researching various investment ideas, developing and submitting business plans, and defending the project to be implemented. Once approved, the business plan is provided with funding. During this phase students complete **Module 1, Introduction to Agribusiness**, where they receive knowledge, tools, and procedures to collect and analyze marketing information and technical, environmental, social, and cost issues required for developing business plans. They also have to take **Module 2, Planning and Organization** of the business, which covers the theoretical and practical concepts of planning, business organization, and organization charts in line with their agribusiness activities. This module includes the basic financial concepts of costs, cash flow, and sensitivity analysis by assessing the degree of uncertainty.

At the end of the third quarter, students defend their business plans before a panel. They must show they have the knowledge, skills, determination, and commitment needed to get their idea 100% funded for working capital. The maximum amount to be financed is \$6,000.00 in local currency equivalent, and business partners in turn contribute with labor to be paid for at project completion. Typically, the panel includes businesspeople involved in the activity to be evaluated, the entrepreneurial team (made up of 4 faculty members and one assistant), one fourth-year student who has experience in, or has performed, a similar line of business, and the project's technical in-house or external advisor selected by the students pitching their business idea.

The project's operating phase revolves around project implementation and is an opportunity for including theoretical concepts in a real life context, in addition to letting students strengthen such skills as decision making, teamwork, time management, conflict resolution, resource management, environmental and social impact abatement, and development of environmental mitigation practices to make the project more sustainable.

At this phase, accounting principles are introduced during **Module 3, Accounting**. Along with theoretical progress, students will have to develop and implement an accounting system using records and control procedures, including audits to show bottom line results, as well as business progress according to the approved business plan. Every month they should file with the Business Project Office (OPE, for its Spanish acronym) a report on inventories, balance sheets, income statements,

each partner's worked hours, an analysis and interpretation of accounting report information, and on overall management of the business.

Subsequently, students complete **Module 4, Finance**, where they learn how to apply tools for analyzing financial statements, making decisions on costs and profitability, assessing the value added created by the business, planning and forecasting future financial situations, managing the business cash flow, comparing planned versus actual performance, and disclosing likely positive or negative discrepancies.

At the project's evaluation phase, students evaluate their "business venture" and the experiences leading to the achieved outcomes, which requires carrying out an assessment and analysis of the project. To this end, they must take into consideration market, technical, environmental, social, administrative, financial, and personal aspects. During this phase, students complete **Module 5, Agribusiness Evaluation**, which covers such concepts as interest management, and inflation and devaluation impacts on cash flow. Various loan management and debt servicing approaches are studied, as well as financing method impacts.

**In Module 6, Environmental Economics**, all projects must evaluate their environmental impact and its economic cost, bearing in mind relevant externalities, such as CO<sub>2</sub> emissions, water footprint, and nitrogen footprint. The project must demonstrate the mitigation actions carried out on identified externalities, or else pay an environmental tax upon project settlement (15% of income). At this phase, the business team should cease commercial operations, honor their debts, and file a final report with an evaluating panel (having the same makeup as in the defense stage). This is a critical step because it provides the team with the opportunity of not only preparing and submitting a professional report on their project but also opening a space to reflect on and analyze lessons learned. Moreover, it is like a two-way bridge since freshmen students are invited to attend business closure presentations, which gives them an assortment of ideas and allows them to envision experiences they might face in developing their own entrepreneurial project. This is a key student-student knowledge transfer space.

Net profits earned are divided among partners after repayment of the loan, production costs, interest payments, environmental taxes, and contribution to the Entrepreneurial Project office. Said contribution is used as revolving capital to offset losses

from non-profitable projects. In case of project failure during evaluation (a failure is defined as the presence of discrepancies higher than 30% from approved figures), an assessment is made to identify causes. If team members are found to be the reason of the failure on account of negligence, they receive a poor grade. A student getting a failing grade must develop a new project including a full feasibility study and implementing the project during the fourth and last academic year. If failure is attributed to an act of God (e.g., a flooded crop), the program sustains the financial losses and a passing grade is awarded.

In brief, Table 1 shows methodological differences between other institutions' new venture model approaches and the model followed at EARTH University, which demonstrates implementation flexibility, an inclusive process in the curriculum map, and a multi-disciplinary nature.

<b>Overall entrepreneurship model approach at various institutions with Entrepreneurship programs</b>	<b>EARTH University's entrepreneurship approach</b>
Entrepreneurship education is optional in the curriculum	Entrepreneurship education is built into the curriculum
Entrepreneurship found in schools of economics and business	Entrepreneurship is multi-disciplinary and an integral part of the agricultural curriculum
Enterprise promotion	Integrated enterprise development
Business incubators	Business drivers
Failure is penalized and the venture must be withdrawn from the incubator	Failure is part of the learning process and causes are analyzed
Based on bank loans, which is an economic barrier to students	Based on seed capital, there is no economic barrier to students
Based on a learning environment focused on the business and its idea	Based on a student-centered learning environment
The student is identified as an entrepreneur	The student identifies his or herself as an entrepreneur.

**Table 1. Differences between the traditional entrepreneurship model approach and EARTH's entrepreneurship model: Key elements**

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# **EARTH's Model Implementation at Other Universities**

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It is worth noting that EARTH University's Entrepreneurial Project Program has been implemented at other universities in both Africa and the Americas, tailored to each institution's needs and requirements.

In Africa, for instance, starting in 2000 EARTH University launched an agricultural education enhancement program supported by Salzburg Global Seminar, the MasterCard Foundation, and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). Through this program both Egerton University in Kenya and Gulu University in Uganda have established entrepreneurship programs awarding the degree of Bachelor of Science in Agri-Entrepreneurship and Communication Management (Bsc.ACM) aimed at transforming African agricultural universities and their graduates into agents of change and effective communicators with practical and positive attitudes, capable of creating, promoting and developing profitable businesses, able to tackle the challenges facing the agricultural sector. The 4-year program at each university currently has about 110 undergraduate students.

In turn, Universidad de Ciencias Comerciales (UCC) in León, Nicaragua, through EARTH graduate Juan de Dios Mairena and supported by EARTH's cooperation agreement, launched the Entrepreneurship, Innovation, and Business Ideas Program (PDEIDE, for its Spanish acronym) in 2013. Since then some 1200 high school students (from 16 public and private schools) and 35 MSMEs have participated. As of 2017, it is leading the Micro-Commerce Center initiative (CDMC, for its Spanish acronym) that provides financing (\$25,000) for 5 MSMEs selected on a competitive basis to receive advisory services from master's program students at UCC and other higher education centers.

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# Lessons Learned and Concluding Reflection

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Developing entrepreneurs is a priority for advancing the agricultural sector and global economy in the developing world. EARTH University has devised an innovative entrepreneurial model approach to train agents of change with the knowledge, skills, attitudes, and motivation needed for working and creating opportunities.

Clearly, educating entrepreneurs entails more than business management training. It is about developing aptitudes, attitudes, and knowledge competencies that will enable future graduates to turn their ideas into action, while becoming agents of positive change in their environment.

In the 25 years of implementing EARTH University's Entrepreneurial Program a series of lessons have been learned, namely:

- At the institutional level
  - The program should be part of the University's DNA; the model should be an inherent part of institutional culture.
  - The program is strengthened to the extent collaborative, community-based, and entrepreneurial networks are created, including various disciplines, as well as public and private sectors.
- At the student level
  - Students become aware of their own potential; the model allows for self-discovery of their own capabilities, seeing themselves as agents of change capable of influencing their environment.
  - Competent students; the model promotes the development of emotional, social, personal, and communication competencies, which are key elements of positive leadership.
- At the facilitator level
  - The key facilitator role not only consists of imparting and conveying knowledge through a good teaching-learning program but it is also about letting students “learn to live and to let live” the “business venture” by always providing and promoting the spaces needed for learners' decision making.
  - Teachers for life; that is, our commitment to education goes far beyond classrooms. Facilitators must practice what they preach because their actions have a significant impact on students, their daily tasks, and their future as professionals.

- Facilitators believe in each individual’s potential; believing in students and the potential inherent in each one is essential.
- Facilitators as entrepreneurs themselves; being an entrepreneur means entrepreneurial competencies require active teaching methods. They should take on the risk involved in this, since making mistakes is part of the process.
- At the program level
  - Multidisciplinary approach involving a close collaboration between scholars from agricultural and social sciences, and other disciplines, that results in students developing leadership skills and knowledge in a holistic manner.

Lastly, it is worth highlighting that, in general, the program should not only be evaluated in terms of economic issues, as suggested by the planned behavior theory (Krueger and Carsrud, 1993). People’s attitudes prompting them to become entrepreneurs are deeply related to a series of subjective norms. The more positive attitudes and actions are, the stronger the intention to exhibit entrepreneurial behavior. The EARTH entrepreneurial program has managed to develop, promote, and actively strengthen the performance of several competencies to train agents of change capable of facing challenges in their environment.

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