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Human Capital Formation for Agribusiness The Case of Zamorano University

*Global Networks, Global Perspectives and Global Talent
Discussions on the Development of Human Capital in Agribusiness¹*

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Abstract

Zamorano University in Honduras has developed a program which takes a holistic approach to preparing students for careers in Agribusiness. The academic foundation is integrated with the *Learning By Doing* (LBD) approach giving students real life experiences in food production, processing, entrepreneurship, costs and marketing and supervising. Fifteen business units are operated by the university to complement students' education: cattle, swine, poultry, tilapia, honey, ornamentals, horticulture, feed, seeds, retail supermarket, and similar enterprises. Agribusiness students also undertake entrepreneurial ventures and have international business training. Some of the Zamorano agribusiness educational strategies might be interesting for other universities.

Keywords: Human Capital Development, *Learning By Doing* (LBD); entrepreneurship

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Introduction

Zamorano is a 70-year-old, private university in Latin America, with 1,250 students from 20 countries who have rural and urban backgrounds. It operates in Honduras and is incorporated in Delaware (USA). The history of the university through 1994 is richly documented by its former Rector, Simón Malo. Over 30% of the students come from family farms in Latin America. This university has a unique educational approach, which requires a high level investment in financial and human capital resources.

The program utilizes a holistic approach to student development, though: knowledge, competences and human virtues. The academic formation is complemented with the *Learning By Doing* (LBD) program, which gives students integrated learning experiences in food production, processing and marketing. Fifteen actual business units are operated by the university campus in: cattle, swine, poultry, tilapia, honey, ornamentals, horticulture, feed, seeds, retail supermarket, and similar enterprises.

Students graduate with 180 undergraduate academic credits with a major called Agribusiness Administration. They complete 44 months of classes in four years, which is about 30 percent more than in many North American universities as documented by Boland, Lehman and Stroade (2001) and Boland and Akridge (2004). After their junior year, the students are required to participate in an internship². Additionally, graduates have completed two years of work experience, which is accepted as labor experience by the highest ranked business schools in the region and fills a work requirement needed to complete the MBA admission process. Graduate students also need the 55 academic credits granted to the LBD education. Students have classes 50% of the time and work 50% of the time. After graduation, students work in agribusiness firms primarily in administration, sales and marketing; some start working in production. A number undertake master and doctoral programs in the USA and other countries.

Value Chain Experience

Consider the experience and education students gain in the cattle chain. Besides taking animal production coursework, the students will inseminate a cow, assist in birthing calves, formulate feeds, and pasture or feed animals. Later, students milk cows, produce ice cream, yogurt, cheeses or fluid milk. They calculate product cost and help in product retailing in the university food store or for local food retailers like Wal-Mart. Students also slaughter animals and prepare meat cuts, sausages, and similar products. All this is done by hand. Students gain real experience from all aspects of business along the value chain. Students experience a similar process in other agribusiness chains such as honey, fruits and vegetables, poultry, tilapia, swine, biological control products, etc.

The LBD modules are the same for all the majors, which reinforces the discipline within a cohort across all majors.

Academic Formation

Students have a common curriculum in the first two years. Starting in the third year, they choose a major: agronomy, agroindustry, agribusiness administration, or environment. The science component of the core curriculum has more emphasis on life sciences: biology, biochemistry, botany, etc.; compared with other universities.

In the third and fourth years students take courses in their chosen career path, which is similar to other universities. For example, a Zamorano agribusiness student has course work similar to those taken by a business student in the USA. However, the Zamorano Agribusiness Administration course work is different in

² For the agribusiness major, students intern in multinational firms and Latin American firms. Some pursue internships in agribusiness programs at Clemson, Florida, Kansas State, Illinois, Louisiana State, Purdue, and Texas A&M. They work on a variety of projects. For example, at Kansas State the students helped collect public information, which was used in writing some of the North American case studies in Boland Gallo (2010).

regards to the application of tools, the cases and examples, which are mainly oriented to agribusiness such as biomasses production, processing and distribution. The other big difference is in the agribusiness experience acquired by the students in the LBD modules. Zamorano is working towards accreditation in USA.

Student's Life System as an Educational Tool

Students live on campus and wear uniforms consisting of denim shirts and jeans suitable for their work. They share dorm rooms as there is no off-campus housing. The rules of discipline, respect for schedules and the interaction with students from 20 different countries develop additional virtues in the students that prepare them for the labor market. This is called "the invisible curriculum."

The Agribusiness Education Approach at Zamorano University

In 2005, the director started a new educational approach.

Agribusiness students are expected to be as well prepared in business matters as any business student. The emphasis is in "firms" rather than "farms." The difference is in the cases and studies, which are focused on Gallo's 12 F's of Agribusiness Demand: Food, Feed, Fiber, Fuel, Forest, Flowers, Fish, Furfural & bioplastics, Pharmacy, Fun, Fertilizers and Flora & Fauna services. Agribusiness professors use cases on food, agricultural commodities, trade, and similar topics in agro-food.

During the fourth year of the agribusiness LBD program, senior students supervise junior students' work in the university enterprises or work in an internal business consultancy designed to help managers or small businesses improve operation efficiency. They may work on projects related to cost analysis, quality, market research, or new product development.

Learning Entrepreneurship by Doing Entrepreneurship LeBDe

As a new part of their co-curricular activities, agribusiness students organize special events such as international business, administration and economic congresses, with limited and subsidiary participation from professors.

Students also manage the marketing, financial and operational components involved in organizing and managing a congress. They face the realism of operative cash flow, marketing, and working with businessmen on fund-raising, hotels, airlines, donors and academicians from other countries. Internal coordination with university academic and administrative authorities is also required. The process helps them develop an entrepreneurial spirit, identifies real leaders and promotes teamwork. Net profits from the events generate about \$15,000 USD annually. The profits are used to further finance their own educational experiences.

Another event organized by the agribusiness students is the *ZamoTour*, a two-day tour to campus and neighboring farms paid for by urban families wishing to experience rural country life. The trip includes activities like feeding calves, nursing baby animals, jamborees, and cultural activities. Another profit center evolved out of this project when students discovered they could fill a need for private urban elementary schools by offering rural field trips for children, which include a variety of nature-sharing experiences for kids.

Financing Part of their Own Education

Students' profits from these activities are primarily used to fund a trip to Florida to attend the *Americas Food and Beverage Show* in Miami, then visit Florida agribusiness firms, interact with farmers, importers, brokers, wholesalers and retailers of organic, ethnic and conventional food in the US market. A portion of these funds are earmarked for solidarity in order to assist students in paying academic, travel, or internship expenses.

Analysis of the Zamorano Agribusiness Educational System

Knowledge and Virtues

Some people might question whether there is any value in learning how to milk a cow. The Zamorano LBD program is a combination of academic learning and task mastery. Although the process of milking a cow, learning to make cheese, or producing a mycorrhiza fungus are valuable skills, it is the virtues acquired through having to milk the cows at 3:00a.m., learning to apply safety and sanitary standards, contributing to a team or learning to supervise others that form permanent non-transferable virtues. The labor component complements a solid academic foundation. Skill sets and theories may change, but virtues remain.

Time Constraints

This educational system faces an important challenge. The objective is to develop a professional, who is almost bilingual – with two years of labor experience in agribusiness within four calendar years. This is a difficult multifaceted goal. In the US, undergraduate programs normally take four years, but classes are only in session eight months per year. At Zamorano classes are conducted 11 months per year. The university sets high standards that motivate students to achieve the highest academic level.

Cost

This educational system is very expensive by Latin American standards. The annual full operative cost is about \$15,000 per student. Many students get grants from their governments to pay the cost. Most students receive financial help. This is strategically risky as priorities of current governments often change. The US, Japan, Taiwan, and European governments and NGOs also have provided grants for students. In addition, the system requires an investment in fixed assets: land, factories, classrooms and labs. To build a new university like this would cost about \$50 million USD in Latin America – a prohibitive amount for new universities. In the United States, the cost would be much higher. The entire program would be difficult to duplicate, although some aspects can be replicated, such as providing opportunities to develop real business knowhow, international learning experiences and student managed entrepreneurial projects.

Human Capital Resources

Zamorano University requires faculty of a certain rank to be bilingual and have a doctorate degree. There is a shortage of faculty working in agribusiness management who possess a doctorate and desire to live in Latin America. The university provides housing and a generous benefits package for faculty. Nonetheless, many faculty are near retirement and succession planning could be a problem in the future.

Zamorano University works closely with colleagues from North American and European universities to keep skills, curriculum, and teaching methods up-to-date, especially concerning the case study method. The university board includes executives or retired executives of multinational agribusiness firms, like Monsanto: alumni and businessmen. The board is very active and meets quarterly in different countries, twice in the US and twice in Latin America, and has academic, financial and other committees. The current president is the great granddaughter of the founder, Samuel Zemurray who was the majoritarian owner and president of United Fruit, Boston–owners of the Chiquita brand.

Zamorano's tuition has increased 50% since 2005, while enrollment has increased 31% in the same period. This is quite an accomplishment. The agribusiness major experienced the highest growth. US and European students also enroll in summer LDB training programs at Zamorano.

Summary

The Zamorano education program and its LBD are quite exceptional. Extensive practical knowledge of agriculture coupled with hands-on work experience, human virtues and exposure to the entire food economy value chain makes this a unique model. Enrollment has grown from the original 150 high school students in 1942 to 1250 university students in 2012.

This paper suggests that agribusiness educators should complement the human capital formation of the future agribusiness leaders, including in their programs, extracurricular business and entrepreneurial activities performed by the students.

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