



## Article

# SBL Effectiveness in Teaching Entrepreneurship Skills to Young Immigrant Mothers Head of Household in Colombia: An Experimental Study

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**Abstract:** This article analyses the perception of the effectiveness of the Simulation-Based Learning method in enhancing entrepreneurship skills and academic performance in 78 young immigrant mothers head of household in Colombia in an entrepreneurship course titled Youth and Entrepreneurship. A Wilcoxon signed rank test, and a Kendall Tau correlation coefficient were used to analyze the perceptions and academic performance from the sample studied during a five-month period. A pre-test, post-test, and achievement of academic objectives questionnaire were applied, as well as a verification test of previous knowledge and a focus group at the end of the entrepreneurship course. It was found that SBL enhance the Planning and Management Skills and the Communication Skill and does not fulfill all the course objectives. This study contributes to the analysis of the effectiveness of unconventional teaching methods in different socioeconomic contexts.

**Keywords:** experimental study; simulation-based learning; planning and management skills; teaching methods; immigration



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## 1. Introduction

Despite various reports of positive experiences in enhancing entrepreneurship skills using SBL internationally, there are few studies on students' perception of the method's effectiveness in enhancing these skills in Colombia, less in socioeconomically vulnerable populations.

Active learning strategies are being used more often, and more work is being devoted to planning and applying them. However, there is currently a limitation of reliable empirical methodologies for testing the impact of simulations in the literature. Most of the purported advantages of using simulations and other active learning strategies are enhanced soft skills, all of which are difficult to quantify. This gap in the literature is especially concerning considering the opportunity cost in using simulations is time not spent utilizing alternative approaches. As evidenced in the references, the available research on the effectiveness of the SBL approach is limited to examining student populations found in formal educational institutions (preschool, middle school, high school, undergraduate, and postgraduate), focusing on gender difference and geographical location.

The usefulness of SBL in socioeconomically vulnerable populations who are not part of these programs and are educated informally is not well documented.

Even less so among illegal immigrant communities that attempt to learn about business sciences through informal education, resulting in conceptual difficulties in those who want to start business projects and who, due to lack of knowledge of basic concepts in entrepreneurship, give up or fail in the process.

This study analyzes the perception of the effectiveness of the SBL method in the development of entrepreneurial skills of a course entitled Youth and Entrepreneurship from 78 immigrant mother-of-household participants from Venezuela who took the course. The skills analyzed were the following: Credit Skill, Financial Skill, Planning and Management Skills, Communication Skill, and Marketing Skill. The study aims to verify if the method contributes to developing the observed skills and meets the course objectives. The skills were selected from previous studies that point the SBL method as effective in enhancing them in different socioeconomic contexts ([Abelsson 2017](#); [Davies 2011](#); [Gomes et al. 2021](#); [Lugo Arias et al. 2020](#); [Sardone 2011](#)). All the participants stated that they were illegal immigrants from Venezuela and were settled in the informal settlement Villa Caracas, at the south of the city of Barranquilla (Colombia). The Youth and Entrepreneurship Course was offered by the Education For All Online foundation with the support of three full-time professors. They scheduled the entrepreneurship course in three hours per week intervals over twelve weeks, of which one was taught conventionally and the other two with the SBL method. The professors rated the participants' academic performance based on the fulfillment of simulated entrepreneurial activities based on the weekly topics teaches in classes.

Participants took a prior test to verify their knowledge of entrepreneurship. Before starting the course, they filled out a pretest about their expectations of entrepreneurship skills enhancement. When the course ended, the participants completed a post-test to verify whether their expectations regarding the development of entrepreneurial skills were developed with the SBL method. In addition, a focus group was held in the last week to find out the participants' most shared ideas about the effectiveness of the method in developing the skills studied and meeting the objectives of the course.

A Wilcoxon signed rank test and a Kendall Tau correlation coefficient were used to analyze the perceptions of the effectiveness of the SBL method in developing the observed entrepreneurship skills and the participants' academic performance. A Wilcoxon signed-rank test was applied to show a statistically significant difference between a pretest and posttest to verify if there were changes in students' perception of the method's effectiveness. A Kendall Tau rank's correlation coefficient and P-values between the course objectives were also applied to verify the correlation between the skills observed and the learning of the course objectives. A focus group was also applied to identify the most relevant and shared ideas about their perception of the SBL method. Such approach introduces a combined analysis that reaffirms the findings beyond the explorable quantitative analysis.

This study answers the following question: is the SBL method effective in developing entrepreneurship skills to economically vulnerable young Venezuelan immigrant mothers' heads of households? The purpose of this study is to expand the available literature on the effectiveness of the SBL method in developing business skills and knowledge in diverse educational and social contexts in developing countries.

This study contributes to verify the efficacy of the SBL method from the participants' perspective in conditions of socioeconomic vulnerability. However, as it was an experimental investigation, the study sample was limited by mobility restrictions and by the physical safety of the researchers.

## 2. Literature Review

There are few studies in Colombia on the perception of the SBL in enhancing entrepreneurial skills from different socioeconomic contexts. Even less in vulnerable populations such as Venezuelan immigrant mothers who are heads of households. Immigration is the entry of individuals to a foreign territory on a voluntary or forced basis which can

be legal (meeting foreign entry requirements) or illegal, thus developing multicultural societies in the short and long term.

Guerrero and Wanjiru (2021) explored the relationships within the current broader literature on migration and entrepreneurship outlining an agenda for engaging the academic community to further research on entrepreneurial migrants from emerging economies. The authors highlight the need to strengthen case studies on finance, business, and social sciences that facilitate interaction between academics and illegal immigrants in vulnerable socioeconomic conditions.

Head of household is defined as the person in charge of supporting the periodic and non-periodic expenses of the other members of their family nucleus during a fiscal year. Colombian policymakers are more concerned about the application of social assistance policies that facilitate their stay in Colombian territory. Around 4.9 million Venezuelans have migrated seeking refuge in various countries (Bogotá 2022; Training Modules 2022; Davies 2011; Eib and Siegert 2019).

In 2019, 1.7 million Venezuelans had migrated to Colombia, of which 42.6% were classified as regular migrants and 57.4% as irregular. The cost of providing health, education, and early childhood services to Venezuelan migrants amounts to 0.12% of GDP (around \$ 1.2 billion Colombian pesos) from 2017 to 2019. Although there is no exact number of immigrant single mothers in Colombia, it is assumed that they constitute one of the sources of national public spending. According to de la Puente Pacheco et al. (2019, 2020a, 2020b), many of them are in a situation of migratory irregularity and were unable to go to their places of work due to fear of deportation and social stigma. Most of these women live in overcrowding conditions with multiple families. A total of 8209 pregnant Venezuelan women migrated to Colombia between April and June 2018 (Lewandowska et al. 2021; Okello Candiya Bongomin et al. 2020; Perry and Morris 2005), 6304 (76.7%) of them without prenatal control and 8045 (98%) without social security. A total of 7496 Venezuelan women were breastfeeding, which corresponds to 3.4% of 219,799 who migrated in the same period. Their vulnerability has resulted in public-private entrepreneurial support projects aimed to economically empowers migrant mothers' heads of households as an alternative to improve their living conditions. For example, the Bogota Chamber of Commerce launched a support program for migrant business entrepreneurs in the service sector (Bogotá 2022). The selected participants were trained to accelerate their business models. However, there are mixed positions about the effectiveness of microenterprise projects in alleviating economic poverty in socially vulnerable populations, but not specifying what kind of vulnerability. While studies such as Eib and Siegert (2019) analyzed how gender and living situations affect entrepreneurs' engagement in their business, home, well-being in Germany and France, finding that entrepreneurship may only be beneficial to women who are self-employed and live alone, there is scarce available literature on the effectiveness of alternative teaching methods to young immigrant mothers' heads of households on business issues, and developing cross curricular skills (Fernandes et al. 2014; Hühn and Rausch 2022; Lateef 2010; Recto and Champion 2018).

Various authors establish that entrepreneurship can undermine support for state-led development and democratic reforms that are necessary for structural transformation and long-term, large-scale development (Torkshavand et al. 2020; Liu et al. 2014; Vos and Brennan 2010). Mak and McCurdy (2019) found that the integration of socioeconomically vulnerable populations in the creation of social enterprises in Ukraine provides favorable conditions for systemic interaction between government, business, and citizens, to create a convenient institutional environment for social enterprises.

However, Cho et al. (2016) mention that evidence of successful programs is limited, and program designs often seem ill-suited to the needs and characteristics of these subsistence entrepreneurs.

Blum et al. (2005) establishes that support programs for economic entrepreneurship contribute to enhancing entrepreneurship skills, empowering economically vulnerable communities (credit skill, financial skill, planning and management skills, communication

skill, and marketing skill). According to the author, the adaptation of academic concepts on business administration improves the construction of knowledge that encourages reflective learning. However, there are doubts about the effectiveness of the conventional teaching method in enhancing these skills due to the limited role that students have in their learning process (limited participation in classes, highly theoretical exams with poor connection to case studies, and the vision of students as passive agents in the classroom).

In another study, based on a survey of 249 recent Bachelor-level graduates who studied entrepreneurship at major Estonian universities, [Kozlinska et al. \(2020\)](#) tested the tripartite Entrepreneurship Education learning outcomes framework using structural equation modeling (SEM), creating the cognitive, skill-based, and emotional outcome constructs, and evaluating their correlations, assuming that they were positive and significant. Although the tripartite competence framework can serve the purpose of measuring the learning outcomes of entrepreneurship education, the limited use of qualitative tools such as focus groups on the studied participants makes it difficult to confirm their results by unconventional methods.

Although several initiatives seek to promote business entrepreneurship, there are few studies on the effectiveness of applied teaching methods from students' perspectives, which makes it difficult to know the efficacy of the initiatives in the participants' active learning processes ([Guerrero and Wanjiru 2021](#); [Kostetska and Berezyak 2014](#); [Gedan 2017](#)).

SBL has been recently embraced in Colombian business as an alternative to promote active learning. There are mixed results on the effectiveness of the SBL method in teaching entrepreneurship courses in economically vulnerable populations. [Doberstein \(2020\)](#) found no relationship between role-playing and the self-reported sense of one's influence on the process or how much they learned about the issues. The author affirms that the prior preparation of conditions that assimilate real-life business situations is necessary for the method to be effective in target populations.

Various studies mention that the SBL method has the potential to contribute to the development of entrepreneurial skills in populations with economic vulnerability in Colombia, especially those with close contact with the country's business daily practices. One way to verify its effectiveness is through the perception of participants who learn with such method ([Farashahi and Tajeddin 2018](#); [de la Puente Pacheco et al. 2020a](#); [Karakurum-Ozdemir et al. 2018](#); [Geithner and Menzel 2016](#); [Nega and Schneider 2014](#); [Loon et al. 2015](#)).

SBL is a method aimed to enhance learning with controlled experiences that replicate substantial aspects of real life in a fully interactive way, which implies that participants are involved in tasks as if they were the real world ([Wunische 2018](#); [Yoo and Kim 2018](#)). A simulated model is valuable if it has a high degree of authenticity of simulations in reflecting reality. During the 1980s, simulation software became available, turning simulation analysis more accessible, so independent groups began to develop simulator systems used in aviation, military training, nuclear power generation, and space flights. In the 1990s, the medical practice used simulation as a routine technique in studies of the behavior of patients in adverse environments, and from there, it expanded to other areas of knowledge, including business management ([Lavoie et al. 2017](#); [Wunische 2018](#)). During the seventies began the use of this method in business schools to better understand the strategic actions of public and private companies. Its use expanded even more in the 1990s with the rise of economic globalization and international capital mobility ([Rezaei et al. 2021](#); [Nega and Schneider 2014](#)).

The following is a literature review on the perception of the effectiveness of the SBL method by students in enhancing the Credit Skill, Financial Skill, Planning and Management Skills, Communication Skill, and Marketing Skill which serves as a theoretical basis for the present study.

Various studies establish that the perception of individuals who have limited knowledge of financial markets is that credit institutions tend to be difficult to understand, so the credit skill is not well developed ([Geithner and Menzel 2016](#)). Even more for populations

in economic vulnerability that does not use financial products to acquire goods and services. The credit skill is based on the understanding of credit, principle, interest, service charges, and all the borrowing methods. A study on financial inclusion in [Sardone \(2011\)](#) found that the presence of financial intermediaries such as microfinance banks enhances financial literacy in the sample studied. The authors expressed that SBL might be useful in understanding financial concepts and fostering a more informed interaction between bank-customers-investors. Another study analyzed student perception of the effectiveness of teaching methods in business education in a sample of 194 undergraduate and MBA participants ([Doberstein 2020](#); [Eib and Siegert 2019](#)).

The authors found that students perceive simulation as the most effective teaching method for developing credit concepts, and self-awareness followed by case study and lecture, respectively. According to the authors, the learning of credit concepts is mostly effective under the principle of learning by doing if the work material is prepared in class and is close to the real external financial conditions.

Regarding the perception of student effectiveness of the SBL method in enhancing the financial skill, [Sardone \(2011\)](#) applied the method in 45 high school students using a group simulation role-play employed at a New Jersey independent high school. The author mentions that integrating basic personal financial education with the SBL approach had a higher perception of effectiveness than the conventional method. The use of the SBL accompanied with the Project-Based Learning (PBL) method helps students identify the range of accounting and budgeting competencies they wish to learn, which depends on the size and complexity of their business projects ([Alberto de la Puente Pacheco et al. 2022](#)). The fact that populations in a situation of economic vulnerability who wish to start a business create micro-businesses mostly based on commercial activity, the method provides further training in accounting. Other authors mention that group role-play in business courses contributes to knowing and preparing financial documents specific to the nature of the simulated companies ([Brunstein et al. 2019](#)). The authors also affirm that SBL has a positive perception from employers who consider role-playing significant in learning financial concepts. However, [Perry and Morris \(2005\)](#) state that although the SBL method is highly effective in learning financial concepts, it is not necessarily sufficient in applying them in a job position. The financial and fiscal technicalities used in different companies, limit the learning effectiveness of the method.

Regarding the perception of the SBL effectiveness in learning the Planning and Management skills, [Geithner and Menzel \(2016\)](#) developed the “C2” business simulation game to meet real work practice needs in 47 participants. Participants experienced the challenges of an interdisciplinary project team as well as project management in complex and rapidly changing situations. The authors found that business simulation games improve not only conceptual knowledge about project management but also team working and the participants’ other soft skills. Another study by ([Loon et al. 2015](#)) also found that SBL is highly effective in developing planning skills including the identification of needs, the generating of goals and objectives, locating of resources, and identifying constraints in business projects.

Apparently, the fact that simulations encourage organized interaction between participants encourages the appropriation of individual roles that results in greater effectiveness of business projects.

The method also encourages the appropriation of individual roles within group work that result in greater effectiveness in the agreement of positions between members of workgroups. In addition, the SBL method encourages students and professionals from various disciplines to make changes in response to the performance evaluation of working group members. [Abelsson \(2017\)](#) found in health professionals that teaching through simulation complements the learning that takes place in everyday work and can have a positive effect on the advances of the care profession.

Studies on the perception of students’ effectiveness of the SBL method in the development of Communication Skill show positive results. [Blum et al. \(2005\)](#) in a controlled

simulator setting, developed a technique for placing clinical information (probes) with members of a team of trainees participating in a 1-day Anesthesia Crisis Resource Management course. It was found that the simulations improved internal communication in the workgroups, and improved the transmission of messages among their members, being more effective in the tasks left by their superiors. [de la Puente Pacheco et al. \(2020b\)](#) analyzed the perception of the effectiveness of two combined teaching methods (PBL and SBL) in undergraduate students in learning economic concepts through the elaboration of export projects. It was also found that communication between working groups helped to strengthen the roles of each member, so there were no overlaps between individual tasks. This avoided the repetition of information in the final written reports delivered to the professors in charge of the analyzed courses. In a focus group made after the application of the teaching methods, the students expressed their satisfaction with the development of internal communication between them, specifying that the simulation activities in class made them use more specific words to describe the individual tasks, unlike the colloquial language used in informal settings. Although it is not possible to determine the effectiveness of the method in improving communication skills in students, it is possible to affirm its effectiveness in different geographic contexts.

Regarding the perception of the effectiveness of the SBL method in the development of the Marketing Skill, there are mixed results. Various authors found that the application of SBL in a digital marketing course for undergraduate students in international business did not have a high perception of effectiveness by the participants ([Ataguba and Ataguba 2020](#)). Although the simulations in the class contributed to define, structure, and distribute individual responsibilities in the workgroups, the students stated that the method was insufficient to replicate the behavior of potential consumers in real life.

It seems that it is not possible to completely replicate the changing behavior of consumers regarding their preferences in the acquisition of products and services. However, in a study on students' perceptions on the efficacy of simulation games in marketing courses, [Vos and Brennan \(2010\)](#) found that students perceived it to be a highly effective learning method, delivering valuable knowledge and skills. In addition, students find the game to be an enjoyable learning approach. Although the authors highlight that the empirical base for the quantitative study was only two universities in the UK, and the questionnaire concerned only student perceptions of their learning, preliminary findings suggest that the SBL method also contributes to developing this skill.

The research question that this study aims to address is if SBL enhances the entrepreneurship skills studied, and the Youth and Entrepreneurship Course objectives based on participants' perception and their academic performance.

The following working hypotheses were verified in the study:

**Hypotheses 1.** *The SBL method is perceived as effective only in the development of the Planning and Management Skills, and the Communication Skill.*

**Hypotheses 2.** *Not all the academic objectives of the Youth and Entrepreneurship Course are developed with the SBL method.*

### 3. Materials and Methods

#### 3.1. Participants

Participants in this research were young Venezuelan immigrant mothers head of household located in an informal settlement neighborhood called Villa Caracas in Barranquilla (Colombia Caribbean coast). Data on samples' perception of SBL effectiveness in teaching entrepreneurship skills were obtained from seventy-eight surveyed individuals who attended the Youth and Entrepreneurship Course offered by the Education For All Online foundation. The participants were divided into three working groups (the first with 21 participants, the second with 29, and the third with 28, respectively) to facilitate the professors' availability. The course lasted twelve weeks with three hours of teaching per week (one theoretical hour and two hours of simulation activities).

Thirty-eight participants knew the SBL method. All the working groups applied the SBL method in learning entrepreneurship skills and had a basic notion about the meaning of entrepreneurship and business. They also had an idea about simulations as a way of learning. All respondents were women between 18 and 21 years of age with primary or secondary education with one to three children per woman.

Sixty-four participants had prior formal working experience from one to two years in commercial and marketing activities. Thirty expressed previous formal or informal entrepreneurship experience in manufacturing activities, retail commerce, and domestic services (housekeeping, bookkeeping). Thirty-two participants stated that they receive support from their parents in caring for their children during their working time. Their registered monetary income was 4.1 U.S. dollars a day.

Three university professors participated in the study. All with a bachelor's degree in business management and a graduate degree in business administration. The professors claimed to have certified experience in university pedagogy and in the application of the SBL method in undergraduate students. All professors applied the SBL method in the 78 participants mentioned above. The Youth and Entrepreneurship Course content were the following: (1) Research and sales, (2) How to manage people, physical resources, and finance, (3) How to keep accurate records, (4) Dealing with creditors, and (5) Speaking, writing, reading. Each professor was assigned one working group, all implementing the SBL method during the course.

### 3.2. Materials

First, before participants started the Youth and Entrepreneurship Course, they filled a Likert pre-test questionnaire to identify their initial expectations concerning the development of the entrepreneurial skills studied (Credit Skill, Financial Skill, Planning and Management Skills, Communication Skill, and Marketing Skill) through the SBL method.

A diagnostic test was applied, which examined previous knowledge of business and management principles to the working groups. The purpose was to verify they had the same knowledge level before experimenting.

The scores range from 1 to 5 (1 is the lowest level, and 5 is the highest level). The 190 participants voluntarily filled in the tests and questionnaire; all physical copies were completed during class time. The diagnostic test was created by the Education For All Online foundation. Then, at the end of the course, they completed a post-test answering the same evaluative questions to highlight if there had been any variations in their perceptions. A Wilcoxon signed rank test and the Kendall Tau correlation coefficient were used to analyze the perceptions of the effectiveness of the SBL method in the development of the business skills studied.

Then a focus group was applied to the three groups to complement the final perception of the participants on the effectiveness of the SBL method through a focus group protocol. The objectives of the Youth and Entrepreneurship Course were converted into questions from the general course information available by the Education For All Online group to know the participants' perception without including a categorization of entrepreneurship skills studied, avoiding participants' bias in their results for or against some skills.

For example:

Objective 1:

Analyze the role of micro-enterprise in socio-economic development.

Question:

Do you understand the role of micro-enterprise in socio-economic development?

This procedure was applied in [de la Puente Pacheco et al. \(2019\)](#), and in [de la Puente Pacheco et al. \(2020a\)](#). The participant professors in the study collected data on the change of participants' entrepreneurship skills through class notes of the groups and individual work, and group tutorials. The professors based their class lessons on *The Emerald Handbook of Women and Entrepreneurship in Developing Economies*, by [Rezaei et al. \(2021\)](#).

### 3.3. Procedure

First, demographic information such as age, entrepreneurship and working experience, and average daily income was collected before starting the Youth and Entrepreneurship Course to assess whether the participants possessed similar characteristics. Professors introduced these along with the course content, course objectives, the entrepreneurship skills to be developed, the forms and the number of evaluations and the essential readings.

From the performance of the participants in the business simulation activities materialized in academic notes evaluated by the professors in charge, it is sought to know the perception of the effectiveness of the participants on the development of the following skills: Credit Skill, Financial Skill, Planning and Management Skills, Communication Skill, and Marketing Skill.

At the beginning of the course, the professors in charge asked the participants to form working groups (three or four people) to work on the business simulation activities. Each group selected an economic activity of their interest in which they applied the simulated activities. Fifteen groups selected commerce of goods, six commerce of services, and four manufacturing activities. Pupils were given five issues for each course topic opening the door to assume leadership roles that facilitated the development of the five entrepreneurship skills studied based on their group interests. The issues related to each course topic were the following: (1) Market research; (2) Individual responsibilities within the working group; (3) Make a budget and calculate future profits; (4) Process of getting a loan for the company; (5) Make a pitch to obtain capital from individual investors (see Appendix A).

Participants were examined with five academic grades (1 being the lowest and five being the highest) for each simulation activity taken from the observations and notes taken by the professors. Each week had three sessions of one hour each for five months. In the first hour, the students received information about the weekly topic of the course in which they solved participants' doubts and encouraged participation. In the two subsequent hours, the working groups planned and applied the assigned simulation. The grades criteria were the following: (1) Knowledge of concepts applied in the simulations; (2) Use of business instruments related to the concepts taught; (3) Use of a technical language; (4) Critical analysis in changing entrepreneurship scenarios; (5) Defined individual roles. The tutoring sessions given by the professors were reduced to allow more autonomy in the simulations. The first groups' evaluation was after the third week covering of the following topics: Current market share of the selected product/service, Product, services and customer experiences, and Advertising and branding. They also had the first group tutoring by the professor in charge to clarify doubts about the effective way to develop the activities based on the academic content of the course.

The professors noted that members of various workgroups perceived that simulation activities would not be effective in developing a business idea in real life and that as immigrant women, there was little chance of realizing their entrepreneurial aspirations. In addition, they also noted that not all the members of the working groups were interested in being entrepreneurs or in developing skills for developing business ideas. Starting from the first tutoring session, the professors adjusted their course program content towards examples from everyday life according to the economic reality of the participants.

Once the difficulties were corrected, they noted that the students had more confidence in applying the simulation activities to the issues selected, improving the Communication and Planning and Management Skills. The professors stated that the interaction between the members of the groups made it easier to solve problems in various parts of simulation activities during the first four weeks. The simulation activity of the first topic (Market research and sale) consisted in the product/service selection of their interest, carry out its market research and verify the economic viability of its sale. From the fifth to the eighth week, the working groups addressed the second and third topics of the course.

The simulation activities were an oral presentation to the professor in charge of the roles that each member of the working groups played in fictitious micro-business. In this

activity, the participants stated that they had more clarity about the usefulness of the lessons learned in previous classes.

During the eighth to the twelfth week, professors taught the third and fourth topics of the course. The groups worked on the simulation of a business loan to a commercial bank where they had to present a formal written request and orally argue the reasons for obtaining it to the professor in charge. Participants had to demonstrate that they knew the concepts of inflation, compound interest rate, and credit repayment. During this time, the second group tutorial was also carried out. The professors noted that the participants were more interested in selling their product as cheaply as possible, which is why they considered that the Planning and Management Skills and Communication Skill were the most useful to get their message to the target audience.

In the twelfth week, the groups prepared a sales pitch of their business models to their classmates to simulate the potential acquisition of venture capital. The professors in charge asked questions about the microenterprise model (projected gross profit, cost per unit of product, projected growth in the next year) based on the information previously provided to the students. In the twelfth week, the last group tutoring was also held to clarify doubts about the individual roles in the pitch. The professors noticed high enthusiasm from the students' moments before presenting their pitch. All participants stated that the Communication Skill was the most relevant throughout the course, not only to improve internal activities in each group but also to enhance the message about the benefits of the selected product and the microenterprise model to the classmates.

The professors in charge repeatedly stated that because the members of the working groups did not know each other previously, the collaborative work was initially limited. Only after they were expressly asked to cooperate, the participants applied the Planning and Management Skills. They stated in the group tutorials that they did not feel convinced in expressing their opinions on the work of their colleagues, worrying that the criticism would be poorly received as indeed it happened in several work sessions. Despite this, the members of the workgroups fulfilled their specific duties, which suggests that perhaps they felt the obligation to remain in the groups without wanting to express empathy in front of the little-known companions.

During the last week, participants also wrote an informative document to their classmates explaining the financial statement of their companies to the professors. A focus group was also carried out to confirm student perceptions about the effectiveness of the SBL method in the development of the entrepreneurship skills analyzed following a focus group protocol.

The focus group began with a presentation of the participants, mentioning their name, age, and initial interest in participating in the Youth and Entrepreneurship Course. Fifty-nine participants shared the idea of wanting to participate in the course to develop skills that allow them to sustain themselves economically due to their status as illegal immigrants, they have difficulties accessing a formal job (even though Colombia offers alternatives to legalize their migratory status). The remaining nineteen participants expressed interest in the course to create their micro-business. The second part of the focus group collected the participants' opinions on whether they perceived the simulations as effective in developing the entrepreneurship skills studied. Seventy-one participants expressed that even though the course helps them to enhance entrepreneurial skills, their migrant status closed potential entrepreneurial opportunities. That mindset changed after the first simulation activity. In addition, all participants shared the idea that they did not believe that the skills learned would be necessary for the informal economic context where many operate. That perception also changes after the first-class week. The participants believe that being illegal immigrants hurts their employment opportunities and the creation of micro-businesses. However, seventy-four participants expressed their satisfaction about the usefulness of the course and the SBL method in the development of Planning and Management and Communication skills in the creation of business projects since it encourages active learning through the assumption of roles in scenarios appropriate to reality. The participants realized that they

had to handle a verbal and written language according to the audience to achieve their business interests.

Although not all the participants stated that they want to be entrepreneurs, and perceive entrepreneurship as very risky, they stated that simulation activities facilitate the learning of technical concepts and operational processes that are hardly learned satisfactorily through the conventional teaching method where professors are the protagonists of the learning processes. They also expressed that the SBL method is highly effective for learning technical concepts related to finance and economics since it contributes to applying them in simulated scenarios. When participants were consulted about which of the studied skills, they considered most relevant in their working life, seventy-four stated that the Planning and Management skills and Communication Skills were the most relevant to adequately express their intentions to future employers, buyers, and investors. The Marketing skill was the worst valued by the participants because the marketing techniques taught were not in line with their socioeconomic reality, especially in low-purchasing power environments.

They propose that the SBL method be applied according to the particular interest of each participant. This supposes the prior revision of the academic content that professors teach. They also propose that the SBL method be applied to face sexist scenarios where members of their community tell them that entrepreneurship is not an activity for women and that they must fulfill their role as housewives. They state that simulation activities would allow them to create arguments that defend their interests. According to them, the SBL method not only contributes to developing entrepreneurship skills but also strengthening arguments in favor of their interests based on the simulation of adverse social scenarios.

#### 4. Results

Participants had a mean of 18.9 years of age ( $SD = 0.95$  years), 77.4% had secondary education, 54.2% had one child, while the rest had two or more. A measure of 36.3% did not have the support of their parents for childcare, and 61.1% were from the city of Maracaibo (Table 1).

**Table 1.** Sociodemographic variables.

Study Sample $n = 190$	
Variables	N (%) or mean $\pm$ SD
Age	18.9 $\pm$ 0.95
Educational level	
Primary education	43 (22.6)
Secondary education	147 (77.4)
Number of children	
1	103 (54.2)
2	82 (43.2)
3	5 (2.6)
Parents support in taking care of the children	
No	69 (36.3)
Yes	121 (63.7)
Hometown	
Barinas	3 (1.58)
Barquisimeto	5 (2.63)
Cabimas	20 (10.5)
Caracas	3 (1.58)
Ciudad Ojeda	30 (15.8)
Coro	2 (1.05)
La concepción	2 (1.05)
Maracaibo	116 (61.1)
Valencia	8 (4.21)
Villa del Rosario	1 (0.53)

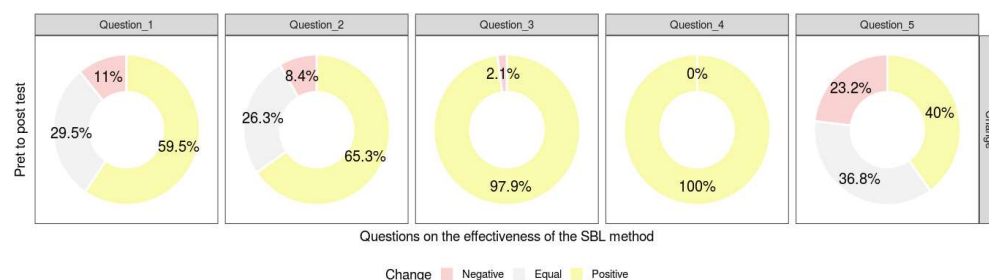
More than half of the interviews reported that their social lives had changed significantly. Some women drop out of school to focus on parenting their children. Others may continue their education but forego extracurricular activities or work to meet their child's needs, creating a gap between them and their former social networks, which negatively impact their learning processes (Liu et al. 2014). Friendships alter when the new mother's attention shifts, according to all respondents. Adolescent mothers frequently decline social opportunities to focus on their children's needs (Loon et al. 2015).

Table 2 shows that 52.6% of the observed population work in the commerce of goods. 83.2% had previous working experience. A measure of 71.6% did not have previous entrepreneurship experience. All participants expressed a growing feeling of obligation, physical problems, insufficient support, incompetence in the maternal role, and emotional distress because of not having a full-time well-paid job that would allow them to contribute economically to their parent's home where they live, as well as cover their children's economic needs. Those who worked prior to having a child reported little or no paid family leave after having a child, employer reluctance to provide flexible schedules, and workplace discrimination, particularly if they were foreigners and their economic and social circumstances were known to be unfavorable. "We're sick of being told what time we may go after a full eight hours every. Would you be offended if a single mother asks when she might go home to check on her sick son? Obviously not. You'd simply let her go. So, what makes this different? Employers should not add to single moms' troubles by making them feel bad for caring for their children.

**Table 2.** Entrepreneurship variables observed.

Study Sample <i>n</i> = 190	
Variables	N (%)
Type of enterprise	
Commerce of goods	100 (52.6)
Commerce of services	72 (37.9)
Manufacturing	18 (9.5)
Previous working experience	
No	32 (16.8)
Yes	158 (83.2)
Previous entrepreneurship experience	
No	136 (71.6)
Yes	54 (28.4)
Final groups grades	
4	158 (83.2)
5	32 (16.8)

Figure 1 shows the change of perception between the pretest and the posttest, where questions 1, 2, 3, and 4 have a positive difference of more than 58%. Question 4 had a positive change of 100%, closely followed by question 3. The simulation exercises helped the participants realize that there is social pressure on adolescent moms to become adults, adopting a perfectionist attitude, which caused them to initially misunderstand what planning and management skills meant outside of the business sphere. Trying to be a great parent will add more stress to their daily lives. They also mentioned that the simulation cases helped them be realistic about their abilities. The high rating of the fourth question reflects a shift in perceptions of the usefulness of simulation exercises in the classroom. According to the participants, negative communication, such as sarcasm, should not be used in business or personal life, since it weakens teamwork and encourages individualistic actions. Aside from business learning, the mothers indicated a desire for their children to not emulate such negative communication.



**Figure 1.** Change of SBL perception.

The Wilcoxon signed-rank test shows a statistically significant difference between pretest and posttest for all questions (Table 3). There are changes in the participants' perception of the SBL effectiveness in learning entrepreneurial skills. In addition to its ability to extrapolate subjects to their personal and family life. It seems that the SBL method strengthens the connection between the topics taught with its application in various contexts.

**Table 3.** Wilcoxon signed rank result.

Questions	Experiment	Average (SD)	Median	Min-Max	Statistic <i>p</i> -Value
Question 1	Pretest	2.09 (0.71)	2	1–4	7980.5
	Post-test	2.87 (0.66)	3	1–4	(<0.001)
Question 2	Pretest	1.98 (0.68)	2	1–4	9190
	Post-test	2.87 (0.75)	3	1–4	(<0.001)
Question 3	Pretest	1.96 (0.72)	2	1–5	17391
	Post-test	4.58 (0.70)	5	2–5	(<0.001)
Question 4	Pretest	1.79 (0.72)	2	1–3	18145
	Post-test	4.70 (0.49)	5	3–5	(<0.001)
Question 5	Pretest	2.17 (0.79)	2	1–4	4700
	Post-test	2.44 (0.82)	2	1–5	(<0.01)

This study also analyzed whether the achievement of the course objectives was related to the studied skills. A Kendall's tau correlation coefficient was applied since the data does not follow a normal distribution pattern. Table 4 shows that question 1 was negatively correlated with objective 2 ( $-0.156$ ,  $p$ -value < 0.05) as with question 3 and objective 5 ( $-0.187$ ,  $p$ -value < 0.01). Question 4 was positively correlated with objective 1 (0.166,  $p$ -value < 0.05).

**Table 4.** Kendall Tau rank's correlation coefficient and  $p$ -values between the course objectives and the post-test.

		Post-Test				
	Results	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5
Question 1	Correlation coefficient	0.066	$-0.156$	$-0.041$	$-0.081$	0.055
	Sig. (bilateral)	0.324	(<0.05)	0.527	0.233	0.387
Question 2	Correlation coefficient	0.019	$-0.065$	$-0.030$	0.082	0.044
	Sig. (bilateral)	0.777	0.315	0.637	0.223	0.490
Question 3	Correlation coefficient	0.068	$-0.029$	$-0.054$	0.024	$-0.187$
	Sig. (bilateral)	0.320	0.662	0.410	0.726	(<0.01)
Question 4	Correlation coefficient	0.166	$-0.041$	$-0.029$	0.109	0.007
	Sig. (bilateral)	(<0.05)	0.545	0.673	0.120	0.91
Question 5	Correlation coefficient	0.022	$-0.051$	0.012	$-0.029$	$-0.083$
	Sig. (bilateral)	0.728	0.433	0.847	0.658	0.184

The participants expressed that the connection between the simulation activities seen during the course, and its application in various contexts beyond entrepreneurial activities, contributed to having more confidence in managing financial resources to develop business projects in the economic activities of their interest. Such a result denotes a contribution in the local context of teaching entrepreneurship to economically and socially vulnerable immigrant populations that arrive on the Colombian Caribbean coast.

## 5. Discussion

The results of the pretest, post-test, focus group, and the SBL-academic objectives questionnaire confirms that the method is effective in enhancing the Planning and Innovation Skills, and the Communication Skill. The results matched with the results of [Wunische \(2018\)](#), and [Lewandowska et al. \(2021\)](#) who compared the effectiveness of the SBL in the development of generic skills to that of lecture classes, finding that students learn more at first from a lecture, but those who were exposed to simulation activities were better to retain the taught lessons over time. In this case study, the participants continued to demonstrate mastery of the topics taught in the first week at week fourteen since they required it to carry out the simulation activities. The results are also like those of [Torkshavand et al. \(2020\)](#) which determined the effects of simulation-based learning on students' skills in providing education to older patients, finding that although there was an improvement in knowledge and skills in older patient education over time, SBL does not improve all the skills studied, thus the mixed perception about its efficiency over long periods.

Roleplay encouraged active learning in business development simulations that familiarize participants with the skills and knowledge necessary to create a company in Colombia. The SBL method enhance two of the studied skills and improve academic performance measured by unconventional assessments which, examine the achievement of course objectives and the improvement of the studied skills. The SBL method had a high perception of effectiveness in improving internal communication in the workgroups, which contributed to defining the roles of each member ([Doberstein 2020](#)). The professors in charge stated that the simulation activities encouraged students to use less colloquial words and to be more careful in the use of it to boost group cooperation. Participants expressed that the possibility of creating companies based on their interests made them concentrate on the simulation activities and the appropriate use of vocabulary with their colleagues.

Professors recommend that by conducting business simulation activities, students be enabled to express their business interests and adapt them to the exercises. This contributes to strengthening entrepreneurial initiatives that could initially be perceived as not applicable, reinforcing [Gomes's](#) finding that social norms have a less positive indirect impact through personal attitude and perceived behavioral control on women's entrepreneurial intention when compared to men ([Gomes et al. 2021](#)).

The results of the statistical tests and ideas shared in the focus group show that SBL is highly effective in enhancing observational learning evidenced in the insertion of first-time participants in their roles as members of a business project. Twenty-nine of the thirty-eight first-time participants expressed their satisfaction with the dynamics of the course based on the simulation activities ([Doberstein 2020](#)). The participant's perception of their satisfaction with SBL in learning business concepts is a reliable signal about their long-term learning process. The result is like [Hühn and Rausch \(2022\)](#) findings on collaboration and emotions during simulation-based learning in general management courses. The author found that successful entrepreneurial teams are better at organizing decision-making processes in SBL experiences when they perceive a high satisfaction with the simulations executed, while cohesion and team organization also supports factors in management SBL environments.

In addition, the participant stated that the Planning and Management Skills tend to develop when it is accompanied by the enhancement of the Communication Skill. They expressed that it is not possible for there to be good internal planning and assumption of individual roles when there is no clear communication in the working groups. This result

is like [Yoo and Kim \(2018\)](#) who determined the effectiveness of simulation framework-works in nursing education, finding that group work in the framework of simulations inpatient care is ineffective when there is no prior coordination between the members of the workgroup, which negatively impacts the metrics of health emergency care.

In addition, the professors observed that these two skills help the participants understand the limits of their individual roles, avoiding overlaps in the simulation activities ([Alberto de la Puente Pacheco et al. 2022](#); [de la Puente Pacheco et al. 2020b](#)). The professors found this as important considering that before the start of the Youth and Entrepreneurship Course, the participants verbally communicated colloquially and even aggressively with each other, which denotes the effectiveness of the SBL in improving the two skills observed. This result agrees with the findings of [Ataguba and Ataguba \(2020\)](#) who establishes that adverse economic, social, and family contexts (especially for single mothers) distort the effective communication of messages towards gestures and words associated with aggressiveness between interlocutors. Hence the need to emphasize that the communication stands out for using neutral words without colloquialisms that could confuse or even offend members of workgroups.

The Credit Skill and the Financial Skill did not have a positive perception from participants. The lack of previous experience with financial institutions negatively impacted the perception of the effectiveness of the SBL method in the two skills. By not having previous contact with financial institutions, they did not know if the simulation activities carried out in classes would prepare them properly.

Such results are like the findings of [Brunstein et al. \(2019\)](#) and [Alberto de la Puente Pacheco et al. \(2022\)](#) who mentions the need to, on the one hand, strengthen practical activities in simulations that enhance basic concepts on finance applicable in various contexts through regular meetings with each working group. On the other hand, meet face-to-face with each working group to clarify doubts about the financial concepts taught, which is relevant in students who are ashamed to ask the professor about class topics in public.

It is not enough to teach financial and banking concepts to people who have not had a relationship with financial institutions. Participants recommend that an initial presentation of representatives of financial institutions in the first week of the course contributes to a better understanding of how banks work. This recommendation is essential since each bank in Colombia has specific conditions for granting business credit ([Farashahi and Tajeddin 2018](#)).

The low perception of effectiveness of the Marketing Skill is because the branding topics were not perceived as adequate for the types of companies that the participants simulated to create. This finding is in line with the position of [Abelsson \(2017\)](#) on the need to contextualize class topics to the economic and social realities of students. Participants recommend that in following simulation courses professors teach marketing techniques that target low-income buyers. However, the professors claim that only teaching limited marketing techniques restricts the expansion of the learning process to a few commercial realities ([Fernandes et al. 2014](#)). Due to the dilemma between participants and professors about the marketing topics to be taught, it is recommended that future applications of the SBL method in economically vulnerable populations be surveyed on a selection of topics that they would be interested in learning about. Thus, active learning would be encouraged from the beginning of the course.

Even though several participants stated that they do not want to be entrepreneurs and that they like the idea of job security, they had a high perception of the effectiveness of the SBL method in preparing them for what they consider to be an adverse economic environment due to being immigrant mothers heads of household. However, despite the methods' effectiveness in developing the selected skills, several participants perceive entrepreneurship as very risky ([Kozlinska et al. 2020](#)). However, they expressed dissatisfaction in the limited face-to-face tutoring since they perceived as difficult to achieve a better performance in defending their business model when there were only three tutoring

sessions throughout the course. Although the group tutoring sessions were reduced to promote autonomy within the groups, the participants recommended increasing the number of tutorials to one per week to verify that the simulation activities are carried out correctly.

This implies that professors interested in using the SBL method should consider whether they have enough time to apply it while maintaining the quality of teaching.

In the focus group, all the participants shared that even though the method prepares for entrepreneurship, it is difficult to reconcile the time between their business projects and childcare (even though several reported their parents' support in the care of minors). They stated that the conflict in the conciliation between working and family time affects them negatively at a personal level since it is usual to receive sexist comments about the role of mothers that they must fulfill before being business entrepreneurs. This affects their intentions to create companies since they do not perceive family support to start a business project. This result is consistent with the study by [Geithner and Menzel \(2016\)](#) that the SBL method needs to be distributed in a way that it facilitates the sharing of the participants' time with the outside world, otherwise their perception of efficacy tends to decrease. On the association between the method and the achievement of the course academic objectives, it is found that SBL was adequate to meet two of the five exposed in Supplementary Data (understand the role of micro-enterprise in socio-economic development and understand the use of financial management). According to the professors in charge, the perception of student effectiveness of the SBL method in understanding the two objectives of the course is because the participants internalized the importance of business entrepreneurship as a vehicle for reducing economic poverty based on their experience. However, the other three objectives of the course did not have a high perception of effectiveness by the participants since the topics taught in each objective would need to be taught with the conventional teaching method ([Lewandowska et al. 2021](#); [Lavoie et al. 2017](#); [Liu et al. 2014](#)). That is, the SBL method appears to be insufficient to understand theoretical concepts with little direct application in the real world.

Another notable result is that the participants chose to simulate the creation of companies in the service sector. Several stated that since they did not have specific knowledge about the development of manufactured products, they chose to simulate the creation of companies that offer low value-added services (supply of domestic employees, childcare, and pet care). The result is in line with what was found by [Okello Candiya Bongomin et al. \(2020\)](#) who suggests that the SBL method includes the simulation of manufactured products elaboration, thus helping students to develop technical skills. This suggestion is essential in illegal migrant populations vulnerable to an undervaluation in labor markets.

## 6. Conclusions

The research findings show that SBL's effectiveness in enhancing two of the five entrepreneurship skills studied and improving adapting business concepts to multiple geographic contexts. The method contributes to improving the internal communication of the workgroups that carry out simulation activities in adapted environments. In addition, the improvement of internal communication contributes to the development of management skills, which resulted in a positive perception of the study participants.

Even though not all participants want to be entrepreneurs, and several perceive entrepreneurship as very risky, they positively valued the use of the SBL method in the development of two skills studied and in the fulfillment of various academic objectives of the course. This study contributes to deepening the economic and educational characterization of immigrants in conditions of financial vulnerability and the effectiveness of teaching methods in generating active learning. Because this is an experimental study, it is difficult to predict if SBL is helpful in developing the studied entrepreneurship skills or reaching the course objectives in all circumstances. The experiment must be repeated in different social settings. It is also limited to using the SBL method with immigrant populations who share cultural and language similarities with the host country, ensuring that the topics taught are

understood and the SBL approach is used effectively. If the observed immigrant group has diverse cultural backgrounds, equivalent results cannot be determined.

The results of this study may serve as a guide to analyze the learning processes of economically and socially vulnerable populations from data collection while implementing social projects. The findings open the door to verify if the skills developed with the SBL method are also valuable if they decide to start a business or personal entrepreneurship project. Furthermore, this study lays the foundations to know the impact of sexist discourses on the work activity of economically vulnerable women in different socioeconomic contexts.

**Supplementary Materials:** The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/socsci11040148/s1>. Table S1: Understand the Role of Micro-Enterprise in Socio-Economic Development and Understand the Use of Financial Management.

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## Appendix A

**Table A1.** Working schedule.

Course Duration by Weeks	Course Content	Course Sub-Content	SBL Activities	Percentages of Academic Grades
1	Market research and sales.	Current market share	First groupwork session: Select an economic sector, product/service and make a market research. First group tutoring by the professor in charge.	20% of the total grade based on (1) Knowledge of concepts applied in the simulations, (2) Use of business instruments related to the concepts taught, (3) Use of a technical language, (4) Critical analysis in changing entrepreneurship scenarios, (5) Defined individual roles.
2		Product, services and customer experiences	Second groupwork session.	
3		Advertising and branding	Third groupwork session.	
4	How to manage people, physical resources, and finance.	Consensus building techniques	Fourth groupwork session: Each member must have a role in the fictitious company.	20% of the total grade based on (1) Knowledge of concepts applied in the simulations, (2) Use of business instruments related to the concepts taught, (3) Use of a technical language, (4) Critical analysis in changing entrepreneurship scenarios, (5) Defined individual roles.
5		Financial, non-financial resources and scarcity		

Table A1. Cont.

Course Duration by Weeks	Course Content	Course Sub-Content	SBL Activities	Percentages of Academic Grades
6	How to keep accurate records.	From informal to formal records	Fifth groupwork session: Based on fictitious sales provided by the professor in charge, participants must create a balance sheet and a state of result.	20% of the total grade based on (1) Knowledge of concepts applied in the simulations, (2) Use of business instruments related to the concepts taught, (3) Use of a technical language, (4) Critical analysis in changing entrepreneurship scenarios, (5) Defined individual roles.
7		General balance and state results	Sixth groupwork session.	
8		Record as a way to getting new financial resources	Second tutoring.	
9	Dealing with creditors.	Financial institutions: Investment banks, commercial banks and financial GO-NGO's	Seventh groupwork session: Apply for a loan based on current local financial data (interest rates, inflation, initial capital).	20% of the total grade based on (1) Knowledge of concepts applied in the simulations, (2) Use of business instruments related to the concepts taught, (3) Use of a technical language, (4) Critical analysis in changing entrepreneurship scenarios, (5) Defined individual roles.
11	Speaking, writing, reading.	Speaking skills	Ninth groupwork session: Create a pitch for acquiring new venture capital and presented to the professor in charge. Final tutoring. Write an informative document to fictitious investors explaining the financial statement of the company. Focus group.	20% of the total grade based on (1) Knowledge of concepts applied in the simulations, (2) Use of business instruments related to the concepts taught, (3) Use of a technical language, (4) Critical analysis in changing entrepreneurship scenarios, (5) Defined individual roles.
12		Writing and reading skills		

## References

- Abelsson, Anna. 2017. Learning through Simulation. *Disaster and Emergency Medicine Journal* 2: 125–28. [CrossRef]
- Alberto de la Puente Pacheco, Mario, Carlos Mario de Oro Aguado, Ellyn Lugo Arias, Heydi Rico, Diana Cifuentes, and Merlys Tafur. 2022. Effectiveness of Model ASEAN Meeting in Enhancing Critical Thinking: A Colombia Case Study. *Interactive Learning Environments* 30: 1–23. [CrossRef]
- Ataguba, Ochea A., and John E. Ataguba. 2020. Social Determinants of Health: The Role of Effective Communication in the COVID-19 Pandemic in Developing Countries. *Global Health Action* 13: 1788263. [CrossRef] [PubMed]
- Blum, Richard H., Daniel B. Raemer, John S. Carroll, Ronald L. Dufresne, and Jeffrey B. Cooper. 2005. A Method for Measuring the Effectiveness of Simulation-Based Team Training for Improving Communication Skills. *Anesthesia & Analgesia* 100: 1375–80. [CrossRef]
- Bogotá, Cámara. 2022. Programa De Migración Productiva Para Impulsar Emprendimientos De Migrantes Venezolanos. *Ccb.Org.Co*. Available online: <https://www.ccb.org.co/en/Press/Noticias-CCB/2021/Mayo/Programa-de-migracion-productiva-para-impulsar-emprendimientos-de-migrantes-venezolanos> (accessed on 24 August 2021).
- Brunstein, Janette, Marta Fabiano Sambiase, Roberto Borges Kerr, Claudine Brunnquell, and Luiz Carlos Jacob Perera. 2019. Sustainability in finance teaching: Evaluating levels of reflection and transformative learning. *Social Responsibility Journal* 16: 1–19. [CrossRef]
- Cho, Yoonyoung, David Robalino, and Samantha Watson. 2016. Supporting Self-Employment And Small-Scale Entrepreneurship: Potential Programs to Improve Livelihoods for Vulnerable Workers. *IZA Journal of Labor Policy* 5: 7. [CrossRef]
- Davies, Martin. 2011. Introduction to the Special Issue on Critical Thinking in Higher Education. *Higher Education Research & Development* 30: 255–60. [CrossRef]
- de la Puente Pacheco, Mario Alberto, Dick Guerra, Carlos Mario de Oro Aguado, and Callum Alexander McGarry. 2019. Undergraduate Students' Perceptions of Project-Based Learning (PBL) Effectiveness: A Case Report in the Colombian Caribbean. *Cogent Education* 6: 1616364. [CrossRef]
- de la Puente Pacheco, Mario Alberto, Carlos Mario de Oro Aguado, and Ellyn Lugo Arias. 2020a. Understanding the Effectiveness of the PBL Method in Different Regional Contexts: The Case of Colombia. *Interactive Learning Environments* 20: 1–14. [CrossRef]
- de la Puente Pacheco, Mario Alberto, Carlos Mario de Oro Aguado, Ellyn Lugo Arias, and Briyis Fontecha Pacheco. 2020b. The Role of Outpatient Care Accreditation in Enhancing Foreign Patients' Perception of Colombian Medical Tourism: A Quasi-experimental Design. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing* 57: 1–21. [CrossRef]

- Doberstein, Carey. 2020. Role-Playing in Public Engagement for Housing for Vulnerable Populations: An Experiment Exploring Its Possibilities And Limitations. *Land Use Policy* 99: 105032. [CrossRef]
- Eib, Constanze, and Steffi Siegert. 2019. Is Female Entrepreneurship Only Empowering for Single Women? Evidence From France and Germany. *Social Sciences* 8: 128. [CrossRef]
- Farashahi, Mehdi, and Mahdi Tajeddin. 2018. Effectiveness of Teaching Methods in Business Education: A Comparison Study on the Learning Outcomes of Lectures, Case Studies And Simulations. *The International Journal of Management Education* 16: 131–42. [CrossRef]
- Fernandes, Daniel, John G. Lynch Jr., and Richard G. Netemeyer. 2014. Financial Literacy, Financial Education, And Downstream Financial Behaviors. *Management Science* 60: 1861–83. [CrossRef]
- Gedan, Benjamin N. 2017. Venezuelan Migration: Is the Western Hemisphere Prepared for a Refugee Crisis? *SAIS Review of International Affairs* 37: 57–64. [CrossRef]
- Geithner, Silke, and Daniela Menzel. 2016. Effectiveness of Learning through Experience And Reflection in a Project Management Simulation. *Simulation & Gaming* 47: 228–56. [CrossRef]
- Gomes, Sofia, João M. Lopes, José Oliveira, Márcio Oliveira, Tânia Santos, and Marlene Sousa. 2021. The Impact of Gender on Entrepreneurial Intention in a Peripheral Region of Europe: A Multigroup Analysis. *Social Sciences* 10: 415. [CrossRef]
- Guerrero, Maribel, and Roseline Wanjiru. 2021. Entrepreneurial Migrants from/in Emerging Economies: Breaking Taboos and Stereotypes. *International Entrepreneurship and Management Journal* 17: 477–506. [CrossRef]
- Hühn, Christian, and Andreas Rausch. 2022. Collaboration and Emotions during Simulation-Based Learning in General Management Courses. *Studies in Educational Evaluation* 73: 101130. [CrossRef]
- Karakurum-Ozdemir, Kamer, Melike Kokkizil, and Gokce Uysal. 2018. Financial Literacy in Developing Countries. *Social Indicators Research* 143: 325–53. [CrossRef]
- Kostetska, Irina, and Ivanna Berezyak. 2014. Social Entrepreneurship as an Innovative Solution Mechanism of Social Problems of Society. *Management Theory and Studies for Rural Business and Infrastructure Development* 36: 567–77. [CrossRef]
- Kozlinska, Inna, Tõnis Mets, and Kärt Rõigas. 2020. Measuring Learning Outcomes of Entrepreneurship Education Using Structural Equation Modeling. *Administrative Sciences* 10: 58. [CrossRef]
- Lateef, Fatimah. 2010. Simulation-Based Learning: Just like the Real Thing. *Journal of Emergencies, Trauma, and Shock* 3: 348. [CrossRef] [PubMed]
- Lavoie, Patrick, Cecile Michaud, Marilou Belisle, Louise Boyer, Emilie Gosselin, Myrian Grondin, Caroline Larue, Stephan Lavoie, and Jacinthe Pepin. 2017. Learning Theories and Tools for the Assessment of Core Nursing Competencies in Simulation: A Theoretical Review. *Journal of Advanced Nursing* 74: 239–50. [CrossRef]
- Lewandowska, Anna, Mateusz Stopa, and Elżbieta Ingłot-Brzęk. 2021. Innovativeness and Entrepreneurship: Socioeconomic Remarks on Regional Development in Peripheral Regions. *Economics & Sociology* 14: 222–35. [CrossRef]
- Liu, Ou Lydia, Lois Frankel, and Katrina Crotts Roohr. 2014. Assessing Critical Thinking in Higher Education: Current State and Directions for next-Generation Assessment. *ETS Research Report Series* 20: 1–23. [CrossRef]
- Loon, Mark, Jason Evans, and Clive Kerridge. 2015. Learning with a Strategic Management Simulation Game: A Case Study. *The International Journal of Management Education* 13: 227–36. [CrossRef]
- Lugo Arias, Elkyn Rafael, Mario Alberto de la Puente Pacheco, and Jose Lugo Arias. 2020. An Examination of Palm Oil Export Competitiveness through Price-Nominal Exchange Rate. *The International Trade Journal* 34: 495–509. [CrossRef]
- Mak, Kevin, and Thomas H. McCurdy. 2019. Simulation-Based Learning Using the RIT Market Simulator and RIT Decision Cases. *Journal of Behavioral and Experimental Finance* 23: 12–22. [CrossRef]
- Nega, Berhanu, and Geoffrey Schneider. 2014. Social Entrepreneurship, Microfinance, and Economic Development in Africa. *Journal of Economic Issues* 48: 367–76. [CrossRef]
- Okello Candiya Bongomin, George, John C. Munene, and Pierre Yourougou. 2020. Examining the Role of Financial Intermediaries in Promoting Financial Literacy and Financial Inclusion among the Poor in Developing Countries: Lessons from Rural Uganda. *Cogent Economics & Finance* 8: 1761274. [CrossRef]
- Perry, Vanessa G., and Marlene D. Morris. 2005. Who Is in Control? the Role of Self-Perception, Knowledge, and Income in Explaining Consumer Financial Behavior. *Journal of Consumer Affairs* 39: 299–313. [CrossRef]
- Recto, Pamela, and Jane Dimmitt Champion. 2018. Mexican-American Adolescents' Perceptions about Causes of Perinatal Depression, Self-Help Strategies, and How to Obtain Mental Health Information. *Journal of Child and Adolescent Psychiatric Nursing* 31: 61–69. [CrossRef] [PubMed]
- Rezaei, Shahamak, Jizhen Li, Shayegheh Ashourizadeh, Veland Ramadani, and Shqipe Gërguri-Rashiti. 2021. *The Emerald Handbook of Women and Entrepreneurship in Developing Economies*. London: Emerald Publishing, pp. 203–7.
- Sardone, Nancy. 2011. Exploring Personal Finance Concepts through Simulation Role Play. *SSRN Electronic Journal* 2: 1–5. [CrossRef]
- Torkshavand, Goodarz, Mahnaz Khatiban, and Ali Reza Soltanian. 2020. Simulation-Based Learning to Enhance Students' Knowledge and Skills in Educating Older Patients. *Nurse Education in Practice* 42: 102–3. [CrossRef] [PubMed]
- Training Modules. 2022. *Cec.Vcn.Bc.Ca*. Available online: <http://cec.vcn.bc.ca/cmp/modules/a-mod.htm> (accessed on 23 September 2021).
- Vos, Lynn, and Ross Brennan. 2010. Marketing Simulation Games: Student and Lecturer Perspectives. *Marketing Intelligence & Planning* 28: 882–97. [CrossRef]

- 
- Wunische, Adam. 2018. Lecture versus Simulation: Testing the Long-Term Effects. *Journal of Political Science Education* 15: 37–48. [[CrossRef](#)]
- Yoo, Jee-Hye, and Young-Ju Kim. 2018. Factors Influencing Nursing Students' Flow Experience during Simulation-Based Learning. *Clinical Simulation in Nursing* 24: 1–8. [[CrossRef](#)]