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Entrepreneurship and Interdisciplinary School Projects of Vulnerable Students in Santiago de Chile: Experiences from the “123 Emprender” Program

Marianela Denegri-Coria, Pamela Salazar-Valenzuela, Pamela Canales-Poo and Alejandra Gallo-Poble

Abstract

Currently, to learn entrepreneurial skills, economic and financial literacy is relevant to understand the globalized world. In this way, around the world various programs are being developed to support the learning process of relevant knowledge and skills. Therefore, financial and entrepreneurial education is being added to different curricular programs from elementary schools to universities, aimed at developing basic skills to survive in this increasingly complex world. From the Center of Excellence in Economic Psychology and Consumption (CEPEC), economic literacy and entrepreneurship have been taught to schoolchildren through the methodology of interdisciplinary classroom projects, where multidisciplinary pedagogical interests and school interests are articulated through a central axis. The second version of the program, “Teaching to Teach: Economics and Entrepreneurship,” for students between 11 and 14 years old, was created in 2016 in conjunction with Juega+, and sought to promote financial knowledge as well as entrepreneurial skills in children, which are developed through a social entrepreneurship project. To evaluate the experience of this program descriptive-type qualitative research has been carried out through six focus groups, one for each participating school, whose general objective was to describe the experience of the participants of the “123 emprender” program, the results obtained show acceptance, enthusiasm and enjoyment to this new form of learning. In addition, students show an incorporation of economic and financial concepts; they give relevance to the collaborative work, among other skills.

Keywords: interdisciplinary projects, entrepreneurial, economic literacy, entrepreneurial skills, student’s experience
1. Introduction

In societies today, economic and financial literacy skills and the incorporation of entrepreneurial skills are ever more relevant. As a result, around the world programs of financial and entrepreneurial education from elementary school to universities are being developed [1]. The aim of this is to develop entrepreneurial skills, such as persistence, creativity, and proactivity, tools that are becoming increasingly relevant in today’s labor market [2].

The definition of financial education is based on conceptualization from the Organization for Economic Cooperation and Development (OECD), plus three significant terms included by the Advisory Committee for Financial Inclusion, in charge of the National Financial Education Strategy: life cycle, attitudes, and welfare related not only to individual welfare but also to social interaction. In this way, the definition of financial education for the general population is:

“Process by the people, throughout their life cycle, to improve their comprehension of the financial world, concepts, and risks and, through information, education, and objective assessment, to develop skills, attitudes, and trust to become more aware of financial risks and opportunities, to make informed decisions, to know where to ask for help, and to take any effective action to improve their welfare and the welfare of society.”

In this manner, the definition seeks to realize that financial education has to be implemented taking into consideration the decisions that are made during the different stages of life, and not just as an adult or a consumer [3, 4].

That is why financial education is in an operational way a means to achieving economic and financial literacy. Understanding the combination of economic and financial knowledge, skills, and attitudes provides people with the tools to understand the economic world, to interpret events directly or indirectly, and make correct and informed judgments that allow effective decision making to determine consumer habits, use of money, and the efficient use of credit now and in the future [5–7].

1.1. Tweens population

Research has shown that 10 to 11 year olds have consolidated cognitive skills, relative autonomy, progressive interest in the social world, and an increased susceptibility to peer influence and mass media. At this stage of life especially, interest is focused on the strategies of economic and financial education. One particular impact at this stage of life is strategic, because for their own characteristics are three types of market: a present market, detailing all the income they manage and the high level of autonomy they have when making decisions about consumption; a future market, because at that age they are establishing attitudes and consumer patterns, which can remain throughout youth and into adult life; and an influence market, which is the impact they have when making common decisions regarding consumption. Therefore, the achievement of a responsible, informed, and efficient
consumption profile could impact not only in an individual way but also in a familiar way as well as socially [8].

1.2. Entrepreneurship

In addition to economic literacy, as mentioned before, entrepreneurial skills have become ever more relevant. Be able to became with something new with a different purpose, being with frequency obtain money the reward is understanding like entrepreneurship, without to be a need condition to refers to a business entrepreneurship, because a lot of activities are realized with social, educational even environmental purposes, among other [9].

In this sense, an entrepreneur is a person who has skills that are different from other people’s. Entrepreneurs can generate innovative ideas and put them into practice, taking account of the risks involved, using support networks and generating successful entrepreneurship, which are all relevant to their own interests and to society in general. They are able to be persistent and have confidence in themselves, and in them own abilities on face of failure. These skills complement the approach of financial education from the OECD, considering in an implied way the abilities of creativity, flexibility, self-confidence, risk, and tolerance to uncertainty, which are currently necessary to enter the working world and contribute to a greater overall perspective, taking into account the opportunities being offered by the environment [10].

Entrepreneurs are no longer considered as bearers and makers of individual interests, but rather as protagonists of a public interest, which not only depends on material progress, but also on the social solidarity of our time, which currently overlooks winning the fight against discrimination [11]. This important task is needed in our society along with the teaching of skills that could help to develop it.

From a psychological perspective, we can define entrepreneur behavior as multidimensional, considering social, environmental, personal, and cognitive factors. Social factors are related to socioeconomic status, education, family, culture, and laws from the country of origin. Personal factors consider skills related to emotional intelligence such as innovation, autonomy, and risk management. Finally, cognitive factors are intelligence, critical thinking, and creativity. While social environmental factors cannot be controlled, personal and cognitive ones can be developed through training, education, and projects, which provide opportunities to vulnerable students [12].

It is understood that the teaching of entrepreneurship should be included in education systems from the beginning as a new approach to training and basic skills. At certain levels it should be considered as a transversal and horizontal facet, which is assisted by an education methodology in accordance with the achievement of expected learning objectives, and, at other levels, it should be established as a concrete subject [13]. It is also true that education should always present the promotion of personal attributes, which are the basis of entrepreneurial spirit, such as creativity, initiative, responsibility, risk management, and independence or work autonomy. This kind of attitude could be taught from elementary school stage and should impart knowledge through an active learning process. For all of the above reasons
it is relevant that schools accept responsibility for teaching deliberate and comprehensive entrepreneurial education with the objective of developing entrepreneurial knowledge, attitude, values, and behaviors in children, enabling them able to reach adulthood with the ability to manage their own and other people’s resources wisely and responsibly [14].

In elementary school, the development of entrepreneurial spirit is achieved through the inclusion of curricular elements in two areas: social sciences (core subjects) and social values (specific subjects). The first element, core subjects, encourages the development of both individuals and teamwork, as well as the essential element of the learning process and the responsibility of studying, for example, self-confidence, critical sense, individual initiative, curiosity, interest and creativity in learning, and entrepreneurial spirit [15].

Quite often practical entrepreneurship experiences include very precise guidelines to enable teachers to fit into the curricula of particular subjects (civic education, social sciences, integrated research projects, business, and entrepreneurship), or for their development in hours of tutoring. This strategy significantly facilitates the level of implementation of certain initiatives as it develops during school hours [15].

The concept of entrepreneurial skills implies not only having knowledge and skills, but also defining the importance of an individual’s independence and creative capital. Training for the competitive world of entrepreneurship implies surpassing the mere definition of performance. It is necessary that individuals generate other projects, new hopes for themselves, and other competences [16].

2. Teaching to Teach: Economics and Entrepreneurship?

Learning moments are specific moments of life that allow people to understand a specific subject in an easier way, since an experimental situation is directly related with what must be learned [17].

In that sense, the learning moments help to answer the next question: What life events allow people to learn more easily the prioritized financial education contents [17]?

From the Center of Excellence in Economic Psychology and Consumption (in Spanish the CEPEC), economic and entrepreneurial literacy has been assisting scholars through interdisciplinary projects methodology, using a central axis of articulated pedagogical multidisciplinary interests and scholarly interests.

This is a methodology that organizes a teaching–learning process in a flexible way, considering diversity as a way to address a topic or problem. The emphasis of a project is the relation between the different disciplinary contents regarding a central axis topic, bringing together the pedagogical interest of teachers with their students’ interest, and acting like an organizer and articulator of varied aspects and disciplines that are part of the project, where there should exist coherence between the various curricula contents of the involved courses [18].

To develop classroom projects it is possible to use varied pedagogical methodologies, such as cooperative groups, concept maps, field trips, construction of models, laboratory work, and computer and audiovisual techniques [17].
Before starting a project in the classroom it is important to establish a general sequence of main objectives, contents, and activities, which should orient the students’ learning process, and should be sufficiently flexible to accept specific suggestions and areas of interest from the students. Here, the teacher’s or teachers team’s role should be similar to an “orchestra director” or “general manager” of the project [19].

What are the phases needed to develop an interdisciplinary project?

There exist three main phases of development:

1. Project formulation.
2. Implementation and execution.
3. Evaluation [17].

1. Project formulation

This phase focuses on organizing the interdisciplinary work team (teachers who are teaching in the selected course and assigning time to the work team in planning activities), its consolidation, and the formulation of the project to be carried out together. The ideal is not more than four subjects or subsectors because it could be more difficult to coordinate interest and common working spaces.

Examples of activities to develop this stage are:

• The formation of the work team (“partnership) of teachers and the central topic.
• Justification of the relevance of the project for both teachers and students and the link with the profile of the students and mission of the school.
• Formulation of objectives and selection of curricular contents, which should incorporate conceptual, procedural, and attitudinal objectives expressed in expected learning.
• Selection of activities and timing.
• Design of evaluation strategies.

Finally, the format of the basic project formulation document should have at least:

• A topic and title.
• Involved subsectors or subjects.
• Justification of the project, considering its importance from a teaching and student perspective.
• Expected learning.
• Contents.
• Central activities to develop the project.
• Evaluation strategies and expected products.
• A timeline.
2. Implementation and execution

In this phase, the project is implemented in a coordinated way by each teacher of the team in each of their respective subjects and schedules. Permanent coordination of the work team is necessary to permanently evaluate project development and incorporate the adjustments that are deemed appropriate.

In addition, it is necessary that the work carried out throughout the project (research, documentation, etc.) should be reflected in evidence or concrete products, such as a mural, a model, a monographic work, plays, exhibitions, the sale of products, and others.

Like the first phase, there are various activities to develop:

- Presentation and launch of project.
- Development of the classroom program of the project, incorporating students’ questions.
- Organization, coordination, and supervision of students work teams of each subject, which will be the same during the development of the project. A continuous review of the logbooks and project portfolios of each team should be carried out.
- Teachers team coordination meetings.
- Self-assessment and incorporation of necessary adjustments.
- Presentation of project products and shared reflection on these.

3. Evaluation

The evaluation phase is a permanent phase, which is organized into three subphases based on a series of questions:

A. Initial evaluation: What do students know about the topic? What are their hypotheses and learning references? What questions are asked? How are they organized initially to answer them?

B. Process evaluation: What are they learning? How are they following the meaning of the project? How are they organizing their logbooks? How do they solve the problems and conflicts inside each teachers team? How is critical reflection being promoted through the project?

C. Product evaluation: What have students learned in relation to the initial proposals? Are they capable of establishing new relationships? What have they reflected in the final report? What does self-assessment and coevaluation reflect? What have we learned as teacher team about teaching work? What has been our progress in developing or consolidating more efficient economic attitudes and competences in our students and ourselves as a teaching team?

Suggested activities to carry out in the evaluation phase:

- Formulation of evaluation questions.
- Development of stages of evaluation and application of assessment tools and strategies.
- Internal analysis of the team and preparation of corrective measures.
- Self-assessment of the teachers team.
- Elaboration of final project reports.

On the other hand, in relation to project tracking, guidelines are identified for the preparation of the project portfolio and the logbook:

A. Project portfolio or project group folder: This is an ideal tool for monitoring formative and summative evaluation of classroom projects. Ideally, each student team should have one, containing a register, evidence of file activities, and project products. In addition, this will allow the development of transversal values such as self-criticism, order, responsibility, and the ability to prioritize.

The portfolio should include at least:
- A script of the project.
- Materials.
- Registers.
- Intermediate and final products.

B. Activities register logbook: This is a personal document and students should develop their own to register progress and difficulties. Ideally, teachers should also prepare their own blog to evaluate the progress of the project, the students’ responses to each of the activities, and the difficulties and their solutions. Finally, the logbook has a basic structure for its evaluation: (1) Date, (2) Activity, (3) Results, and (4) Personal reflections.

The second version of the “Teaching to Teach: Economics and Entrepreneurship” program was launched in 2016 together with Juega+, which was created from the need to incorporate, in a playful and applied way, economic and financial literacy in school planning. For it to work, it is based on the development of entrepreneurship, so that this could be considered as a future option for self-employment. It seeks to promote financial knowledge as well as entrepreneurial skills in children, which are developed through a project of social entrepreneurship.

2.1. To whom is it addressed?

The 123 program is aimed mainly at students between the second and third cycle, with a low socioeconomic level, belonging to municipal schools of the commune of Peñalolén, in the city of Santiago de Chile.

2.2. Why use interdisciplinary projects?

It has been determined that the best way to teach financial content and develop the fnonding competences is to use “learning moments” in the resources and pedagogical activities that the different educational programs design and implement [14].
2.3. How was it done?

First, it was realized that teachers in the participant schools would have to be trained in economic and financial concepts, entrepreneurial skills, and interdisciplinary project methodology. As a part of this, teachers formulated their projects into interdisciplinary teams.

The projects were then communicated to students and a tutor assisted the teachers in the development of the projects.

The topics chosen by teachers to work with the projects were:

- “Radio: New Generation,” a radio station that was transmitted at recess and lunchtime; students broadcast news, music, and interviews of interest to them. The project will be replicated annually.
- “Healthy diet,” where students became familiar with the meaning of healthy food using samples of healthy snacks. In addition, students were made aware of the new law regarding black seals in commercialized food. This law indicates that food that contains more than recommended amounts of calories, saturated fat, sodium, and sugar must have a black seal containing dietary information.
- “Entertain your recess,” a project that consisted of game stands made from recycled materials, for example: throwing jars with a ball. Students from other courses paid to use it; if they won, they received an award, like a teddy.
- “3Rs” (Reduce, Recycle, and Reuse), a project that taught students how to make objects with recycled and reused materials.
- “Solidarity cooperative,” a project whose main objective was to create a solidarity cooperative, which has a common fund to buy tools and elements that children can use in classes.
- “City,” a project that created a small city in the classroom with about 1,50 meter stands that represented different city services such as a bank, taxi service, bakery, and drugstore, among others. In this city, children could learn economic and financial concepts and how they are used in daily life.

The development and results of projects were presented in an exhibition by teachers and a number of students.

Finally, an evaluation of the experience through a focus group was realized with students from the participant courses.

3. Method

The methodology used to evaluate the students’ experience from the 123 emprender program had a qualitative, descriptive design.

It was a convenience sample of 48 students from participant schools, made up of six focus groups with eight students in each group; the participant students were randomly selected. Focus group topics were related to the experience of students in the program, who were asked
about their opinions, relevant topics, significant learnings, learnings used in daily life, learnings used in family life, and which improvements they would like to make.

Focus groups were recorded and transcribed. Transcriptions were analyzed in the NVivo program, version 11. An open coding strategy was used to analyze the contents of the transcriptions, which is a way of codifying whereby codes are not premeditated and appear at the same moment. Subsequently, a dendrogram was generated by joining related concepts.

4. Results

Based on a qualitative analysis of the information collected, in the dendrogram (Figure 1) it is possible to observe, in the first instance, a dichotomous classification referring to the experience of students who are attending the second or third school cycle in the “123 emprender” program.

At first, considering the experience of the “123 entrepreneurship” program, it possible to identify some positive aspects such as the development of learning and future discourses. In relation to the development of learning, students identify the acquisition of concepts related to economic and financial literacy, such as savings, budgeting, planning, compare prices, and money. “We learn how to compare prices before we buy” and “We learn financial language.” In addition, they identify the acquisition of mathematically logical concepts, which were used for the development of the project; these included addition, subtraction, division, multiplication, interpretation of graphics, and others. “We saw percentages, graphics, and charts in mathematics class” and “We learn how to calculate a discount.”

![Dendrogram](http://dx.doi.org/10.5772/intechopen.74088)
In addition, participants identifying the development of values learning focused on valuing knowledge and learning about economics. “It’s important to learn how to take care of money.” Also, through the planning and execution of the project the students gave value to the importance of communicating, referred to the relevance of effectively communicating, were tolerant, and knew how to listen to and transmit information. “We learn to listen to others” and “We listen to others’ opinions.”

According to the participants, behavioral learning emphasizes financial planning, the acquisition of new practices of using money, and favorable practices of saving, for example, there was an increase in students who actually save and have the ability to manage a business, mainly by collaborating in the administration of family businesses. “There are many children who previously did not save and now they do” and “To compare sales on shops in downtown.”

Considering the planning, development, and execution of an entrepreneurship, through the methodology of interdisciplinary classroom projects, students can work and develop many competences related to teamwork, communication, and responsibility. “The course worked as a team.”

Also, in relation to learning, the students’ tendency for future declarations is observed, mainly linked to the support of a family business. Through the developed and acquired tools, the participants feel able to collaborate and/or take charge of a family business. “My mom has a Christmas decoration business, and now I will be able to help her.” In relation to this, with the knowledge and skills base acquired, they also feel capable of developing an entrepreneurship. “I want to be a veterinarian and open my own pet clinic.” Likewise, by increasing their participation as economic citizens, through the learnings of the project, they can prevent future bad financial practices. “It is interesting to learn about money and thus not make a mistake in the future.”

The development of the project had an impact on the social bonding of students with various actors in their environment. An important element of this was their families, for example, reverse resocialization, where they can transfer knowledge to members of their family, such as parents and grandparents, favoring certain positive financial practices and highlighting the usefulness of the new knowledge acquired. “I told my grandmother that the bottles she will not use can be used as flower pots” and “When I go shopping with my mom, I tell her not to buy without checking the price in other stores.” On the other hand, students identify union between peers and classmates, by working together using the skills they have developed. “We come together more as a course.”

Different emotions were experienced by the participants of the project; they described it as a fun, entertaining, cool, and incredible experience. They felt rewarded when observing the impact and results of a project of which they were a part and emphasized this emotion by referring to the program as a pleasant and beautiful, fantastic experience. “It was fun” and “It was really cool.”

Although the participants valued the initiative and development of the program, they suggested improvements could be incorporated in future versions. For example, the project should be allowed to develop over a longer period of time, and while it was accessible, there should be more physical space for the planning and execution of the project, the participation of the establishment involving other courses should be increased, and, finally, to generate impact in other establishments, there should be diffusion and promotion of the developed projects. “I feel it was a short time and I would have liked it to last longer” and “Get together with other schools to tell them to eat healthily.” (The topic of this project was healthy diet.)
Despite the fact that the majority of the participants valued positively the experience of the program, some students could identify certain negative characteristics and evaluations, in relation to learning, could be inferred than students do not incorporate contents referred to the project. “I do not know I didn’t learn anything.” It possible observe than some students have a conceptual understand, but are not be able to apply it. “I’m not sure how to do the exercise” (referring to the calculation of a percentage of discount). Regarding to learning of values some students do not identify any value in the contents reviewed and developed in the project, not being able to identifying or useless to learn. “We didn’t learn anything but it was fun.”

There was a lack of involvement with some of the participants’ significant connections with others, such as lack of family and school support, lack of commitment and involvement of peers, and, finally, the individualism of certain peers, who considered the project competitive, especially during project development. “My mom told me to do it alone” and “They don’t care about our project.”

Finally, there were some who experienced participation in the program as negative; the predominant emotion in this case was stress. Participants considered the activities as boring and even showed indifference to them. “I don’t care” and “It was boring.”

5. Conclusions

There is generally a positive assessment of the program, but it is important to consider negative assessments, especially if improvements in the development of new versions are included.

The students emphasized the playful way of acquiring new knowledge and recognized in large part the effectiveness of this, since various means are used to facilitate learning, including reading, debating, planning, teaching, creating, and developing, among other recommended activities, for example, the learning pyramid.

Participation in programs focused on acquiring and developing knowledge, in this case, financial literacy, and focused on work with entrepreneurial skills, which could generate greater self-confidence, motivation for achievement, and projection both personally and professionally. The ability to work in a team, the responsibility and development of diverse traits and/or styles of leadership, in addition to the link with students’ peers, the environment, and the generation of networks, applicable and useful both now and in the future, strengthen the development of economic world comprehension and entrepreneurial skills by bringing out the necessary implementation of this kind of program in formal education. In Chile, economic education is precarious, is developing on 20 or 22 weeks in the 12 years of formal education (contents like, economic market, limited resources and unlimited needs, some bank instruments), and does not exist programmatic axes which organize the dispersed topics in the different subjects [8]. Also, the lack of a pedagogical model of economic education for guidance and organization is demonstrated. Economic education is more like an isolated instructional recommendation, which cannot effectively handle the world of consumption and management of money [19].
It is important to consider that even when some students did not experience the achievement of incorporation of the contents, it was possible to observe a gradual incorporation of these, where some achieved an attitude and behavioral change. However, one should not ignore the incorporation of technical language, values, and content, because these could be the first step to develop significant learnings, considering the necessary training and construction of a systemic vision of the economic–social model in which they are placed and the acquisition of competences for the achievement of critical, reflexive, and socially responsible consumption[20].

It is also possible to consider how the teachers described the objectives of the project, how these were to be worked, and the learning involved, because some children may not recognize as learning the incorporation of skills such as teamwork, leadership, self-confidence, and problem solving, among others; however, this could be achieved by incorporating an interview with the teachers, which could be included in future versions of the program.

Finally, it is important to mention that this project provides a first approach to interdisciplinary projects related to entrepreneurship topics, and allows continual research into its importance and how it is possible teach this important topic in schools. For the future, projects should consider further teacher training on issues such as conflict resolution, objectives planning and setting, curricular adaptation, and “soft skills.”

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