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THE IMPACT OF A TEACHING GARDEN ON THE LOCAL PRODUCTIVE ARRANGEMENT AND THE DEVELOPMENT OF ENTREPRENEURSHIP

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Abstract: Climate change, the reduction in food supply and the increase in the cost of means of production have been aggravated by the Coronavirus pandemic and raise questions about effective methods to delay and modify the announced chaos. In 2020, according to the UN food security and nutrition report, more than 2.3 billion people (or 30% of the global population) did not have access to adequate food during the pandemic, this indicator is known as the prevalence of food insecurity moderate or severe. In Brazil, there are 33.1 million Brazilians in a situation of hunger according to 2022 data from the Brazilian Network for Research in Sovereignty and Food and Nutritional Security (Penssan), compared to 2018 (10.3 million), reveals that there are 22.8 million more people in this condition. Faced with the growing need for food, we have the challenge of developing techniques to make it accessible in production and acquisition by those who need it most, linking projects of local productive arrangements (APL) including the vulnerable population and young people who will enter the job market in developing sustainable awareness and entrepreneurial skills that guarantee their employability. This project research aims to propose the study of the impacts arising from the implementation of a pedagogical garden in the teaching of sustainable entrepreneurship in Technical courses Integrated into High School in a state technical school, located in the municipality of Ribeirão Pires, in addition to seeking to improve the quality of lunch offered at the school unit and community involvement in processes that enable the development of a family production system that is aligned with the sustainability objectives of the UN 2030 agenda.

Keywords: food, apl, entrepreneurship, educational garden

INTRODUCTION

In 2020 we saw the world suffer with the announcement of the coronavirus 19 (COVID-19) pandemic. By the month of June 2022, the number of cases in the world exceeded 550 million, causing 6.34 million deaths according to the COVID-19 report from the (CSSE) [1]. Brazil through ordinance, number: 454, of March 20, 2020, declares the voluntary transmission of the virus, however, with delays and ineffective measures, the country holds the record for fatalities due to Covid-19, being the second with approximately 670 thousand deaths and 32 million cases. Although the number of cases does not reach 10% of the global number, we have a fatality rate of more than 12%, a reflection of delays and fostering disbelief in science [1].

With this scenario, entire families were left without work and without a livelihood, making Brazil once again among the countries with a very high proportion of the population in a situation of severe food insecurity. The Report from the Brazilian Research Network on Food Sovereignty and Security – PENSSAN brought impressive numbers in its second National Survey on food insecurity in the context of the covid-19 pandemic released on 06/08/2022, which shows that only 4 out of 10 Families have full access to food. The report reveals that more than half of the Brazilian population (58.7%) lives with food insecurity to some degree between mild, moderate and severe, the latter meaning hunger [2].

This setback takes us back to the levels of the 1990s, in a serious economic context, with hyperinflation and turbulence in the implementation of democracy. Hunger resulting from severe poverty, deforestation, the positive agribusiness agenda and school dropout rates show that the country is set back by up to 30 years [3].

JUSTIFICATION

Brazil's return to the hunger map was not just a consequence of the coronavirus crisis, the lack of investment in fundamental programs such as the PAA (Food Acquisition Program) with the dismantling of public policies and the lack of support for family farmers in recent years. five years, are relevant to the increase in food insecurity that is being debated at the moment.

The advancement of flexibility in production models directly impacted the loss of thousands of jobs in industry and in the field with the use of machines, robots and programs to automate both production and administrative processes [4]. Industry 4.0 is already a reality and tends to promote greater changes in this scenario with the increasing use of artificial intelligence, the internet of things, robotics, biotechnology, autonomous vehicles, among many other resources [5]. This reality affects workers of all ages. Data obtained from the report by the Brazilian Institute of Geography and Statistics - IBGE (2018) showed that the unemployment rate in Brazil surpassed the 12% barrier, formed by 12.2 million people looking for a job without finding it in the second quarter of 2018, and for workers between 18 and 24 years old the rate was 26.6%. The same survey also reveals a higher unemployment rate for a portion of the population aged between 14 and 17 years old, reaching 42.7% of the assessed population, more than triple the general unemployment rate in Brazil [6]

In this context of unemployment and pandemic, we have seen poverty increase dramatically, for example, in the case of children who can only access food when they are at school. Since the 1940s, Brazil has been developing proposals to reduce mortality and malnutrition. After the promulgation of the 1988 constitution, the right to school meals was guaranteed to all elementary school students through a supplementary school meal program offered by the federal, state and municipal governments. OPNAE (National School Food Program), popularly known as school meals, which is managed by the National Education Development Fund (FNDE), it transfers, on a supplementary basis, financial resources to the states, the Federal District and the municipalities. This amount is intended to partially meet the nutritional needs of basic education students per school day according to table 1 [7].

Type	value
Day care	R$ 1.07
Pre school	R$ 0.53
Indigenous and quilombola schools	BRL 0.64
Elementary and high school	BRL 0.36
Youth and adult education	BRL 0.32
Full education	R$ 1.07
Full-time secondary schools	R$ 2.00
Specialized after-hours support students	R$ 0.53

Tab 1. Values transferred per student per school day

Source: PNAE (2022).

The values transferred are far from ideal values. Some municipalities complement the lunch with other resources, but research demonstrate that the majority depends exclusively on the amounts transferred by the program. And with the aggravating factor of inflation, insufficient values lead to the failure to provide nutritionally adequate food. In addition to immediate hunger, the recurrent lack of food will give children and young people irreversible problems relating to cognition, growth, anemia, malnutrition and other consequences for health and social development. Malnourished children do not respond adequately to stimuli and, therefore, have difficulty motivating themselves, their interest is reduced in playing and exploring new things, and they have learning difficulties.

Given the socioeconomic issues in several

Brazilian regions, many students depend on the food they receive at school so they can develop. On the other hand, this type of food is not always associated with public policies, or programs that aim to improve the quality of the food that arrives at teaching units. School Food generally suffers the consequences of legal requirements, such as tenders and auctions [8], where companies that offer the lowest prices are generally the winners. Despite the demand for quality, there is not always a properly prepared professional responsible for this control in the teaching units when the food is received. Therefore, School Food does not always arrive with the desired quality to be able to offer the necessary nutrients so that the student feels motivated to develop meaningful learning.

With this scenario, the use of school spaces to promote and implement projects and pedagogical practices that promote the reduction of hunger, based on sustainable production models, which encourage student protagonism, environmental awareness and social entrepreneurship with voluntary actions comes in line with the UN sustainability objectives outlined as goals to be achieved by 2030.

The use of the school garden for active learning is aligned with the directives of the new BNCC (National Common Curricular Base) and aligned with the mission of the CPS (Centro Paula Souza) in promoting "professional and technological public education within benchmarks of excellence, aiming at the technological, economic and social development of the State of São Paulo" [9] and aligned with trends in the contemporary world, strengthening the development of socio-emotional skills and skills related to entrepreneurship, increasing the chances of young people entering the job market or developing skills that allow them to own their own business and manage their careers.

From a pedagogical point of view, concern about School Food has mobilized national and international organizations for some years [10]. The first International Conference on Health Promotion, held in Ottawa in 1986, indicated the need to develop ways for communities and individuals to improve and exercise greater control over their health. And that includes food [11].

With regard to learning, in the first years of life the child needs to be stimulated so that they feel motivated to develop their potential. And for this it is necessary to have a balanced and healthy diet. This is one of the main components for preparing a solid foundation for satisfactory growth and development [12].

Through educational projects related to School Food, it is possible to promote changes in the way our students see hunger in the world. This is because these projects guarantee spaces for the practice of lived experiences, since the act of eating together with certain social groups, cultural appropriation occurs, without discriminatory prejudices [13].

PROBLEM STATEMENT

Brazil is considered one of the largest food producers in the world and has in its history the paradox of form, where the school has always been fundamental in promoting dignity and support for children and young people who often find school meals the only food they can eat. day. This way, how the participation of students in a volunteer project that aims to develop sustainable entrepreneurship and socio-emotional skills, implemented in high school integrated with technical education, can contribute to reducing hunger, improving the snack consumed daily, changing the relationship with the environment, develop skills called soft skills, impacting your personal and professional trajectory using a sustainable garden model and an application to create a mini local food bank?

OBJECTIVES

The research is being initiated, and at the end of the project it is expected to measure the impact of creating the garden on the daily lives of participating students, its relevance in the pedagogical and interdisciplinary context, with the school as a vector of good environmental practices, improving school meals, creating an application to exchange vegetables produced by students in their homes, create a local food bank and encourage a culture of respect for the environment and social responsibility throughout the community.

SPECIFIC OBJECTIVES

a) development of skills and competencies relevant to the new professional profile of high school students integrated with technicians in Administration, IT, Chemistry and Human Resources.

b) create a laboratory outside the classroom called a garden aimed at learning how to produce your own food

c) improve school meals, creating a mini food bank for exchange between students, helping students in greatest need.

RESEARCH METHOD

The research method is exploratory, with a qualitative approach [13], through a case study. The means of investigation will be bibliographical research, material published in books, dissertations, theses, articles, institutional documents, periodicals and magazines. The instruments for collecting monitoring of graduates and students participating in the project will be carried out through structured questionnaires with open and closed questions, divided into blocks that will be prepared using the Google Forms tool. In this case, the creation of an experimental school pedagogical garden is planned, within a discipline entitled Integrator II project of the technical course integrated into high school in business administration – a group of 20 students will participate in this study at first.

RESULTS

So far, the working groups have been divided in the EU where the case study is being implemented. Lecture circles were promoted with volunteer teams from the NGO Lebem de Ribeirão Pires, where topics of socio-environmental relevance were discussed during face-to-face meetings. Permaculture, composting, ergonomics and health were pillars for the lectures. Interventions in the field (garden space) are carried out weekly on Thursdays, and the students participating in the project are already developing their work focusing on the theme of social, urban and school gardens. A social event was held and the collection of cooking oil was encouraged, generating funds to purchase material for soil cultivation and safety equipment, moving towards reverse logistics and the circular economy.

The students directly involved with the "vegetable garden" project are mobilized and created projects with the theme to be presented at the end of the year as a result of the immersion, based on the UN 2030 agenda and seeking social inclusion. Two students from the computer science course integrated into high school are participating in processes for scientific initiation scholarships at the PIBIC-EM CPS-CNPq, 2022/2023 edition and are already working with the basis of the program (APP) that will manage the mini school food bank, encouraging barter with the internal and external community, and are also building a website for interaction and information about the garden and its benefits, promoting culture of pesticide-free food production and healthy eating. Students were encouraged to create their own experiments at

home, in a simple way and partially presented the results, using pet bottles for suspended planting, or spaces in their backyards, and the reports were delivered and validated, forming part of the learning assessment.

With this Learning Laboratory, the aim is to encourage students to work with real situations, developing socio-environmental practices that meet local demands and that achieve the objectives of the UN 2030 Agenda and its sustainability objectives, applied to the needs of a healthier diet, because by experiencing all the processes of land preparation, planting, harvesting and distribution, students will be able to develop specific knowledge, skills and attitudes such as: greater responsibility with deadlines and presentation of creative solutions applicable to the specificities of numerous problem situations, among others [16].

It is also intended to promote the development of personal and behavioral skills such as teamwork, communication, interaction, resilience, ability to solve problems and belonging; in addition to healthy eating habits and a sense of responsibility regarding world hunger. In short, the aim is to favor the perspectives of young students enrolled in integrated technical courses, expanding their skills, technical competencies and emotional punch, through experiences its practical skills with autonomy.

At the end of the project, the aim is to evaluate what were, in fact, the main results obtained and what the main socio-emotional skills and abilities were developed with the creation of the Learning Laboratory from the perspective of students, teachers, family members and the school community.

FINAL CONSIDERATIONS

From a pedagogical point of view, the school garden will be a Learning Laboratory, where students will be encouraged to learn about cultivation practices, the nutritional value of food and encourage social entrepreneurship, with earnings for their own lunch served today at the school, which unfortunately is poor in nutrients.

From the point of view will be encouraged to become aware that School Meals, more than a benefit, is a right of Basic Education students, recognized by the Brazilian Constitution. You will also be able to see that cultivating a school garden can be a strong ally to complete School Meals.

The application of sustainable practices such as composting, hydroponics and permaculture will dialogue transversally with technical disciplines such as reverse logistics and common axis such as mathematics, biology, geography, being a great path for interdisciplinary and intercourse projects.

From the point of view cultural, students will be able to see the benefits of planning, cultivating and harvesting products from a vegetable garden in which he helped to build and thus felt encouraged to encourage or carry out the planting of food throughout his life, thus helping to combat hunger in Brazil. This type of stimulus could generate public policies, incentives for family gardens, adequate and quality food and many other benefits that a school project can provide in the formation of adults who are more aware of the needs of the community in which they live. And when you realize that quality food belongs to you, you will be able to subsidize your practice and encourage many people around you to do it too.

Therefore, the creation of a school garden, along the lines of a Learning Laboratory, will create learning processes that can guarantee greater availability of food to various

communities, food grown in more sustainable ways and quality of life through more efficient nutrition.

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