

Innovation ecosystem at RFEPCT and student leadership at Cefet/RJ

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Abstract

The world is going through a period of intense transformations and consolidation of new information and communication technologies (ICT). So being innovative is increasingly becoming a principle of professional survival. Talking about student leadership means giving a voice to the people who are studying. Whether with the simple creation of opportunities for students to develop their own projects, or with a fully democratic system, these are experiences that seek to stimulate and strengthen students' autonomy, making them more active and responsible in the learning process. This qualitative exploratory research, which 'in times of pandemic', has become virtual and digital, investigates how the innovation habitats of Cefet/RJ, through student leadership, have contributed to society. Thus, this project aims to identify activities that were and have been carried out by the innovation ecosystem formed by innovation habitats, represented by their incubators, by the Junior Companies and by Enactus.

Keywords

Innovation ecosystem, Student leadership, Junior companies, RFEPCT, Cefet/RJ.

1. Introduction

Nowadays, innovating is no longer a choice for companies, but rather, it is a necessity to be able to survive in an increasingly competitive market. Companies' need for a professional who has the potential to create and is open to change has never been more evident. And with that in mind, Education Institutions need to be prepared to deliver professionals prepared and trained for this 21st century job market to society.

The word innovation is defined as the introduction to the market of products, processes, methods or systems that did not exist previously or with some new and different characteristic from those in force. And, according to the Oslo Manual (OECD, 2018), it can be divided into four types: product, process, marketing and organizational.

Some critics assert that technical schools, especially the Federal Technological Education Centers (Cefets) have distanced themselves from their primary purpose: the preparation of labor for industry. This view is wrong and based on a perception of an outdated professional profile. In order to train new professionals, a paradigm shift based on technological education is necessary, combining education, research and extension at all levels (Maruyama, 2013).

Federal Technological Education Centers (Cefets), became part of the Federal Professional, Scientific and Technological Education Network (RFEPCT) based on Law nº 11.892, of December 29, 2008, which created the 38 Federal Institutes of Education with the purpose to reorganize the federal institutions of professional and technological education, in order to act in an integrated manner regionally. However, it is observed that the RFEPCT creation process started in the beginning of the 20th century, when then President Nilo Peçanha, through Decree No. 7,566, of September 23, 1909, created a School of Apprentices and Craftsmen in each capital of Brazilian states (BRASIL, 1909).

Since RFEPCT is responsible for professional training, with scientific and technological basis, it is clear that the institutions that compose it are important actors in the development of Brazilian education and the country's innovation (Silva, 2020). For Rapchan, Maruyama and Lima (2017), despite the relative commitment of RFEPCT in the formation of networks and in approaching companies seeking to develop innovations, there seems to be a long way to go, mainly in participation in collaborative networks, in the training of personnel, in the definition of interaction processes and in the regulation of activities necessary for the effective contribution to Brazilian innovation. Thus, the question of this research arises: how does an RFEPCT institution operate in its innovation ecosystem?

An important concept within the educational institutions of the Federal Network of Professional Scientific and Technological Education (RFEPCT), which includes Cefet/RJ, which has been contributing to this, are the innovation habitats. This qualitative research of an exploratory nature, which 'in times of pandemic', has become virtual and digital, investigates how the innovation habitats of Cefet/RJ, through student leadership, have contributed to society; through the placement of professionals with important knowledge, skills and attitudes required by the current job market as well as the contributions resulting from the activities stimulated and carried out by the institutional innovation ecosystem.

To be systematic and mature, this innovation process needs a stimulating and catalyzing environment for the competences and initiatives of the various actors that work in the creative process that, even according to different logics and priorities, could work cooperatively (Sbragia et al, 2006). Thus, the participation of these actors as

protagonists or assistants in the interactive process of networks for innovation depends, to a large extent, on the maturation of the relationships between these actors and on their interpretation of the contribution of scientific and technological production in this process (Rapchan, 2019).

The youth protagonism is one of the strong pillars of the pedagogical model only occurs through the effective participation of the student in the activities proposed by the teacher. No student becomes the protagonist of their formative process just by listening to lectures. Active methodologies have the function of involving the student in the class stages. This becomes feasible when the proposed challenges are interesting, make sense and are connected with practice. Based on this premise, this research seeks to focus on student leadership from the social actors present in the areas of teaching, research, extension and innovation at Cefet/RJ.

1.1 Objectives

Understand how the innovation ecosystem of Cefet/RJ, through its innovation habitats, has been working to serve Brazilian society.

2. Literature Review: Innovation perspective

The Oslo Manual (OECD, 2005) considers innovation under five approaches: product innovation; service innovation; innovation as a process; marketing innovation (market, sales) and organizational innovation. DOSI (1982) leads us to the idea that the most common definition of innovation comprises this term as “the search, the discovery, the experiment, the development, the imitation and, finally, the use of new products, processes or organizational techniques”. While Schumpeter stressed that technological innovation is the main force for economic development (Ayres, 1988).

The Triple Helix model (Triple Helix) presents the university-industry-government interaction and is the key to innovation in knowledge societies that aims to address the following issues (Maruyama, 2013, p.67): How to improve the role of universities in regional and social economic development? How can governments encourage citizens to take an active role in promoting innovation? How can these citizens seek this government support to innovate? How can companies collaborate with each other, with the government and with universities to become more innovative? What are the critical elements to achieve these goals? Thus, the vision of the Triple Helix positions the academy as an important vector of economic and social development, bringing it closer to the demands of the society in which it is inserted (Rapchan, 2019).

Universities are increasingly recognized as key players in innovation systems, through their active participation in the process of producing knowledge for innovation. Although the approaches to open innovation, the Triple Helix and the National Innovation System are not exactly harmonious with each other, they seem to converge with the functions that the Technological Innovation Centers (NITs) of universities seem to play: to relate teaching activities, research and extension with demands, especially those coming from companies (Rapchan, Maruyama, Lima, 2017).

According to Etzkowitz (1989), the academy began to make its effective contribution to local and regional economic development, approaching companies and incorporating the activities resulting from them into their daily lives, previously marked only by teaching and research, establishing the context of what is called the Second Academic Revolution. Therefore, from the interaction between universities and companies, considering the great distinction between the mission and the nature of such entities, as well as the new social role to be played by both with regard to the effective contribution to solving problems social and economic, forced the dissemination of new organizational arrangements (Epsztejn and Theotonio, 2004).

Within the universe of company incubators, Rangel and Carmo (2019) consider the incubation stage to be the most dynamic and broad process in the systematization of the incubation network program, since it comprises a series of procedures performed by NI, which will from the selection of the project to be incubated to the monitoring of indicators related to the development of the entrepreneur and his work team.

According to Crispino (2009), the scenarios are formulated from driving forces that interact in order to direct the design of the history of the future to this or that point. They are greater or lesser forces, more or less predictable, impregnated by the vision of those who work in the formulation and of those who project the scenario. The forces of

critical uncertainty are indispensable for the flexibility of scenario prediction. Such uncertainties, related to the predetermined elements, are as important as the subject that produces the scenarios.

From the innovation scenario, we sought to understand some of the main concepts about Education that could be associated with this research proposal, as in the following section.

3. Literature Review: Education perspective

Teaching and learning must come to be understood as the possibility of arousing in the student the curiosity, the investigative, questioning and transforming spirit of reality. The way of teaching can no longer be an instrument of teacher control over the student, but a way of discovering, researching and building together; reconstructing the structure of knowledge and promoting a new way of understanding the production of knowledge (Silva, 2020).

Lopes (1998) argues that for the training of citizens, so that they exercise specialized functions in all areas of the humanities, science, technology, the liberal professions, the education of young people to exercise their life and continue the construction work of Brazil will be fundamental activities of higher education institutions. Gadotti (2001) contextualizes that we must 'think the education of the future', thinking, mainly about the categories that can explain them. For example, from this author "we cannot deny the relevance of certain Freirean and Marxist categories, such as 'dialogicity' and 'dialecticity', the validity of a dialogical pedagogy or praxis" (Gadotti, 2001, p.82).

Fourez (2003) indicates that it is fundamental that scientific education seeks, above all, the formation, insertion and creative capacity of citizens in society, which are very important and required skills in the labor market today.

For the purposes of developing this research, the works presented by Delors (1998) were adopted as a parameter. According to the report "Education: a treasure to be discovered." Prepared by Jacques Delors - French professor, politician and economist - the key to this is to work with students on the necessary skills around the four pillars of education, they are: learning to know, learn to do, learn to live together and learn to be. Thus, the description of the pillars is considered as (DELORS, 1998):

- *Learning to know* aims to master the means of knowledge itself, so that each one learns to understand the world around him, developing beyond the critical sense, professional and communication skills and abilities. And for that, in the initial training, students must have access to instruments, concepts and references resulting from the advances in science and innovations of the time.
- *Learning to do* is intrinsic when learning to be, and this learning is more linked to knowledge for the issue of professional training, that is, how to teach the student to do what he learned in class and prepare for the market and also train professionals able to change, since it is not possible to predict what the job market will be like in the future, learning to do is directly linked to the ability to adapt to the scenario in which the student and future professional will be.
- *Learning to live together* can be achieved in formal education. Programs to initiate young people in cooperation projects, since childhood, in the field of sporting and cultural activities, but also encouraging their participation in social activities. Higher education institutions must, in this field, continue the work started since childhood, training a professional able to deal with differences. The practice of team projects and the participation of teachers and students in common projects lead to the learning of conflict resolution methods that will be carried out throughout academic and later professional life.
- *Learning to be* is a means of developing personality freely and being able to act with increasing capacity for autonomy, discernment, critical sense and self-responsibility. Education must contribute to total development. Every human being must learn from childhood to develop critical and autonomous thoughts so that he can form his personality and value judgment and, above all, know how to make choices at different times in life.

As can be seen, the model presented by Delors (1998) has student protagonism as its basic principle. And for that, the student's involvement, performing different tasks-activities, through active methodologies, is a central feature of the model. Significant learning takes place when, when facing the subjects under study, the student is urged to do activities, such as writing texts, solving problems and challenges, elaborating graphics, mental maps, reflecting, comparing, analyzing, discussing with colleagues and with the teacher and at the end present a result of their activities.

4. Methods & Data collection

To carry out this study, a bibliographical survey was carried out, based on consultations with books, articles, theses, dissertations and papers on innovation ecosystems, innovation habitats, student leadership and four pillars of

education; in addition to consultations on the institutional website of Cefet/RJ on the institution and its innovation ecosystem. These surveys were important because they enabled the identification of the innovation habitats existing at Cefet/RJ, as well as the activities developed by them, in addition to the main points that would be addressed in the interviews with representatives of each of these habitats.

Then, for the interviews, four phone calls and four video calls were made with the agents involved in each of these habitats, they are: a manager of the technological incubator and a manager of the social incubator of the Maracanã headquarters campus, two advisory professors from Enactus, the student president and student vice president of Enactus Cefet/RJ, a professor at the institution and a student manager of an Enactus Cefet/RJ project. The interviews were conducted with the aim of identifying the projects developed by them and their main contributions to society, in addition to their main challenges and opportunities for each of the innovation habitats identified at Cefet/RJ.

All of these interviews were carried out from July 31 to August 19, 2020 with the aim of identifying the main activities developed by the innovation habitats of the Cefet/RJ campus Maracanã. And to carry them out, the open question model was chosen, which allows the respondent to express their opinion or knowledge freely, without the influence of an interviewer (Vergara, 2000). Any subsequent doubts were clarified by e-mails or text messages, when the habitat agent was not available for a new interview.

5. Results and Discussion

Cefet-RJ is a century-old institution whose mission is “to promote education through teaching, research and extension activities that provide, in a reflective and critical way, comprehensive training (humanistic, scientific and technological, ethical, political and social) of professionals capable of contributing to the scientific, cultural, technological and economic development of society” (CEFET-RJ, 2018).

Currently, Cefet/RJ has four main innovation habitats, they are: Enactus, ITESS, IETEC and Cefet-Jr., Which will be presented below as well as their contributions to society, following the presented methodology.

5.1 Enactus

According to the institutional website of Enactus Cefet/RJ (2020), Enactus can be defined as “a worldwide non-profit organization, present in 37 countries, which turns university students into leaders of the future, through the promotion of entrepreneurial action”. Thus enabling, to its participants, interaction and contact with students from different countries and regions, and consequently, the development of an important skill: learning to live together.

For 18 years, Enactus Cefet/RJ has been transforming realities through the creation of social entrepreneurship projects based on the social, environmental and economic pillars (Enactus, 2020). Such projects are implemented in socially vulnerable communities, with the aim of generating empowerment and quality of life for the people who compose these, thus contributing to the development of future socially engaged professionals and, consequently, developing learning to be. In this sense, below are shown in Table 1 some projects carried out by the students who are part of Enactus Cefet/RJ and then an analysis of these projects based on the four pillars of education is presented.

Table 1. Projects carried out by Enactus.

PROJECT	OBJETIVE	CHALLENGE	CONTRIBUTION
Aurora	-Transsexual people inclusion in formal work market force	-Neglected people by work market force -Companies awareness - Psychological support during the process of inclusion in the market	- Reduction of marginalization -Promotes more diverse environments -Equips opportunities
Gera	-Connect cooperatives to waste generators -Promote environmental awareness	- Lack of environmental awareness -Promote a circular economy -To enable members to promote greater autonomy	- Environmental responsibility -Growth of an economic area -More freedom for members through training
Mandala	-Improve the socioeconomic situation and quality of life of CAPS Severino dos Santos	- Social and labor reinsertion - Income generation through the work of patients with psychosocial disorders	-Development of new skills in patients - Income generation through products developed by patients -Branding of the brand to make products more attractive -Partnership with establishments that resell products produced at CAPS
Iara	- Work in the community of Suruí - Magé with the purpose of reducing the	- Precarious access to water	- Development of low-cost technology -Access to clean water for the community

	impacts caused by the lack of basic sanitation		-Increase in income of beneficiaries -Local awareness about the risks of lack of drinking water
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As shown in Table 1, Enactus Cefet/RJ has been contributing through its activities to the fulfillment of the institutional mission of Cefet / RJ in terms of “contributing to society”: (i) by reducing marginalization with a project that includes trans people in the formal job market; (ii) creating a sense of social responsibility in a project to connect cooperators to waste generators; (iii) by generating income to improve the socioeconomic situation and quality of life of patients with psychosocial disorders and (iv) by providing access to clean water for people in a community in Rio de Janeiro. In addition, from the realization of these activities, it is clear that the classroom next to Enactus provides the student with important skills related to the 4 pillars of education.

Learning to know because in the classroom it is possible to have knowledge of the instruments, concepts and references so that students can, for example, know which methodologies to apply when they face a challenge in a project like Mandala (Table 1) in which they work with branding to make products more attractive and generate greater income or when looking for partnerships showing the ability that higher education offers in negotiation.

Learning to do is the basis of this habitat, as they use what they saw in the classroom and develop, with the help of a teacher advisor, concepts and tools to later put them into practice. In the Iara project (Table 1), for example, students not only provide training to raise awareness in the community, but also developed low-cost technology through the practical application of the lessons learned in the classroom. In addition, it is important to highlight that this habitat provides a great capacity for adaptation for this professional future, since the projects change until they are completed and the student must be able to make this change because during that time he can also be changed projects or area within it.

Learning to live together can be seen not only in the habitat itself, but also in the relationship with the community, participation in projects with different but all social objectives, making it able to deal with differences but mainly to develop the ability to adaptation to the environment. This pillar is very evident when we see that the main contributions of the Aurora project (Table 1) are to promote more diverse environments and equate opportunities for trans people.

And finally, *learning to be* is another relevant pillar, because during the interviews it was possible to hear students reporting the sense of ownership, that is, they are developing this competence that is based on autonomy, self-responsibility, elaboration of critical and autonomous thinking about certain scenario. In the Gera project (Table 1), by promoting environmental awareness, student leadership is evident in thinking about a future scenario and the consequences that it can bring. Environmental awareness shows that they have developed this competence and that in addition to critical thinking about a given situation, there is also the action that is the project.

5.2 Junior Enterprise

According to the institutional website of Empresa Junior Cefet-RJ (2020), Cefet-Jr is a non-profit civil entity, made up of undergraduate students from Cefet / RJ. Our purpose is to transform university students through the application of business experience, through management learning, high impact projects and entrepreneurial culture. In this way, they manage to make them committed entrepreneurs capable of transforming Brazil into a better country.

The Junior Company allows the student to acquire and improve professional skills, these are intended to become qualified learning environments complementing the learning offered by undergraduate curricula (LUNA et al., 2014). The following are some of the projects (Table 2) developed by Cefet-Jr and their contribution to society:

Table 2. Projects developed by Cefet-Jr

PROJECT	OBJETIVE	CHALLENGE	CONTRIBUTION
Peruvian Cuisine	- Study of the acceptability of a cuisine in a specific location for opening a restaurant	- Lack of acceptance of Peruvian cuisine on site -Initial project done without consulting -Accelerate the project	-Feasibility study -Possibility of a second unit -Change in the initial project -Agility in the schedule
Visual Identity	- Restructuring the visual identity of a course	- Absence of visual identity -High number of courses and low strategic targeting for target audience	-New visual identity -Networking -Company problem solved by habitat -Strategic targeting -Study of the local economy

Shark Project	-Women's shoe company with different modeling	-Feasibility of a new business aimed at a specific target audience -Focus on shoes for tall women, transgenders and players -Need to analyze potential consumers.	-Knowledge of potential demand -600 answers about the business idea giving an overview -Feasibility analysis also helps students to have an idea of the market
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Cefet-Jr offers solutions that consist of five steps: validate business model, financial management, marketing plan, strategic planning and management systems (Con). With a body of students from different courses, the company demonstrates that they have prior knowledge of these subjects that are present in curricula and are able to put them into practice; thus developing, learning to do and feedback to learn to know through the execution of the work itself. Learning to do according to the case of the Visual Identity project (Table 2) shows that with the knowledge acquired in the classroom, students put into practice learning to do. Subjects taught in some higher education curricula are essential for restructuring the visual identity of a course. In addition, the habitat carried out a strategic direction and study of the local economy, activities that without prior knowledge obtained in the classroom would not present real contributions to society.

Learning to live together is present in the daily life of the company when developing team projects, resolving conflicts and making decisions since the step by step of the project involves a group of students, highlighting once again the student role. On the Cefet-Jr website, it is possible to observe that the “Spartan spirit” is mentioned, which is closely linked to this pillar because they affirm “Teamwork is essential, always trying to help the Spartan beside” (Con). Referring to the Spartan army that in history wins for the great ability to work as a team and die for the glory of its city and helping the team (Almeida Jr, 2020).

Learning to be is present since the purpose of this habitat's mission: to develop leaders. And for that, it is necessary, among other characteristics, to develop critical and autonomous thinking, self-responsibility and action in certain situations. In this sense, in this habitat there is the motto “Go there and do it”, which refers to individual proactivity in performing urgent, important and necessary tasks even if this is not your obligation (Con).

5.3 Incubator

Incubators are an integral part of the studied ecosystem and are also used to teach entrepreneurship. For Vedovello and Figueiredo (2005), these provide companies that appear on the market with adequate physical facilities, in addition to support services shared between companies and advice on the functioning of the market, technologies and feasibility of financial support. The objective of the incubators present at Cefet/RJ is to create an environment conducive to the emergence of new companies and projects, making them graduate and enter the market able to face the challenges. At Cefet/RJ there are currently two types of incubators: the social incubator (ITESS) and the technological incubator, ITEC, which are presented below:

A) ITESS

According to ITESS institutional website (2020):

“ITESS is a coordinator of the Extension Directorate that carries out systematic training and advisory activities for solidarity economy enterprises - EES, which ranges from the beginning to the achievement of organizational autonomy and economic viability, with the objective of generating work and income and it is also a space for studies, research and development of social technologies aimed at the organization of work, with a focus on self-management and within the principles of Solidarity Economy - ECO-SOL ”(ITE).

The formation of solidary economy incubators has become an important space to think about the social role of higher education institutions. In addition, in this innovation habitat, we also observe the development of the four pillars necessary for a graduate student to be prepared for the job market, they are also present, as shown below from the analyzes elaborated based on the projects presented in Table 3 and the data collected, according to the presented methodology.

Learning to know is present in the habitat and was observed in interviews with members of the habitat. ITESS has members able to help Associations and Social Cooperatives and needs to know how to help an incubated company or project to grow in the principles of solidarity economy. Fulfilling the mission of the incubator that is aligned with the institutional mission. In addition, the social incubator of Cefet / RJ has the necessary knowledge and when a project is incubated they align the knowledge to put it into practice at the right time.

Table 3. Projects developed by ITES

PROJECT	OBJETIVE	CHALLENGE	CONTRIBUTION
Sustainable Tourism	-Improvement of tricycles circulating in Paquetá (Paquetáxi) and study for sustainable and community-based tourism	-Tricycles could not circulate on rainy days -Tourism harmed the environment	-Feasibility study -Possibility of a second unit -Change in the initial project -Agility in the schedule
Caqui Vinegar	-Add value to persimmon, transforming it into products like persimmon vinegar, linked to an association of a community with few resources	-Fruit waste -Need for alternative income for the months when there is no harvest of the fruit -A large part of persimmon is lost due to not having manpower to harvest	-Increase in income. -Knowledge of the product they sell -Self-management and cooperation -Reduction of waste

Learning to do, according to the case of the sustainable tourism project (Table 3), shows that, with the knowledge acquired in the classroom, students were able to put into practice learning to do: once the subjects taught in some curricula higher education courses were essential for holding a welding workshop in Paquetá. These workshops are essential for Paquetáxi members to have more autonomy and also for tricycles to work on rainy days, thus helping local tourism.

Learning to live together is already present in the projects and mainly because the incubator passes the principles of solidarity economy. Persimmon vinegar (Table 3), for example, was a product that many did not master the technique of how to make but through classes taught by members of the incubator the producers learned principles of self-management and cooperation and realized that the more knowledge is disseminated, the greater the potential for them to become known in the production of persimmon vinegar, consequently increasing their incomes and thus contributing to the development of the region.

Learning to be is present from the conception of the social incubator, since the idea is for the company to be incubated until learning to be, which includes self-management, being fully applied to the project. In the projects studied, it is possible to observe that they aim at autonomy, self-management and independence for communities. The learning to be pillar is very present in projects since pre-incubation because, in addition to improvements, the community learns to continue the incubator's work, always increasing and making a self-assessment.

B) Cefet/RJ Technological Business Incubator - IETEC

The Cefet/RJ Technological Business Incubator (IETEC), according to the institutional website of ReINC (2020): “is a Coordination linked to the Extension Directorate (DIREX), which aims to house projects and new companies, for a limited period, offering an infrastructure for shared use and permanent assistance in business development. Entrepreneurs have private modules and a series of services for individual or shared use, also counting on support to complement their training, both in technical and managerial aspects, respecting the regulations and the annual budget. In Table 4, some projects developed by IETEC are presented:

Table 4. Projects developed by ITEC

PROJECT	OBJETIVE	CHALLENGE	CONTRIBUTION
Graduated Company – AS3 Engenharia	-Understanding market needs	-Avoid and reduce emergency maintenance expenses -Reduce the cost of repairing damaged equipment - Reduce downtime -Understanding market needs	-Cost reduction -Hiring of CEFET / RJ's own labor -Adaptation of the company to the business
Graduated Company – N2N Virtual	-Validate the business idea and launch on the market	- Understand who the customer was -Reduce expenses -Investments in strategic areas	-Comprehension of strategic areas -Access to CEFET/RJ teachers to answer questions about procedures

There are conditions for integration with the faculty and researchers, as well as the use of services from the institution's laboratories and workshops, in addition to participation in events and in dissemination channels, which already exist at Cefet/RJ”.

5.4 General analysis of Cefet/RJ ecosystem

As can be seen, throughout the research carried out, the innovation habitats of Cefet-RJ have proved to be an important environment for the training of professionals trained to serve the current job market, through the development of important professional skills together to your students. Important aspects that have contributed to this in the view of the interviewees are: (i) the quality of the institutional faculty, (ii) the recognition by society of the “Cefet-RJ” brand.

However, on the other hand, it was also observed that some aspects need to be addressed and improved. Among the most cited, are: (i) lack of communication and (ii) interaction amongst different innovation habitats, which leads to the dispersion of knowledge and sometimes habitats that should be integrated, end up being isolated. The following is a summary of the main common points reported in the interviews carried out, using a SWOT matrix (Figure 1), referring to the main strengths, weaknesses, opportunities and threats related to the Cefet/RJ innovation ecosystem:

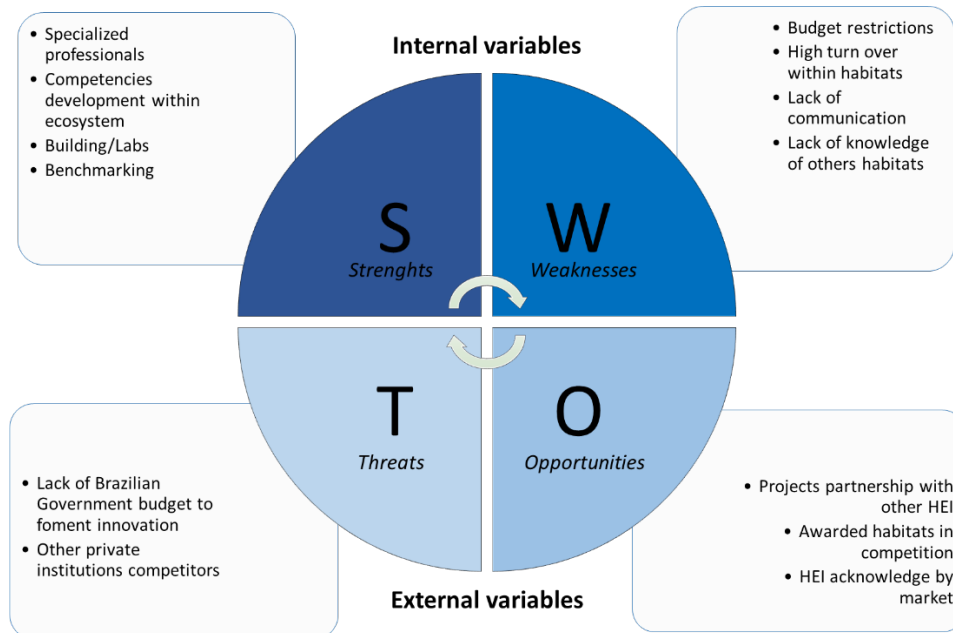


Figure 1. SWOT analysis of Cefet/RJ innovation ecosystem.

It is necessary to rethink the way of integrating habitats to deliver better results for society, thus fulfilling the mission of the federal network and recovering the primordial characteristic of an ecosystem, which is the interaction between its components. So that each of the habitats can, based on their expertise, exchange information and knowledge, thus seeking to strengthen themselves and, consequently, provide increasingly better services to Brazilian society, whether through the placement of increasingly prepared professionals to the job market, or even through the results generated by the realization of its activities.

6. Conclusion

This work represents a first effort to understand how the innovation ecosystem of Cefet / RJ, through its innovation habitats, has been working to serve Brazilian society. Whether through its activities carried out, but also through the fulfillment of its institutional mission by placing qualified professionals in the job market, able to meet the professional demands of the 21st century.

The study showed that in innovation habitats, students develop important competencies and skills desired by the current job market, cited throughout the research based on the four pillars of education, and perform important activities for society.

In addition, the study also demonstrated that these environments have been shown to be fundamental for solving real problems, for promoting the sharing of solutions to problems, for the development of practical knowledge from

different areas, for the encouragement of new ideas and decision-making. decision; so that being part of these habitats becomes a great differential for the egress student to start in the job market.

However, on the other hand, there was also a need for Cefet / RJ to increasingly seek to integrate and strengthen these environments, thinking of ways to better use its innovation ecosystem as a didactic resource to be used by educational institutions, the from the different expertise and knowledge present in each of these environments.

Finally, it can be concluded from the points presented that the innovation habitats in conjunction with the classroom offer the graduates the skills that the job market requires. Thus training professionals able to deal with recurring challenges in companies, from the development of all four pillars of education worked and presented during this research.

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