

INNOVATION IN THE IFPB *CAMPUS* JOÃO PESSOA: A SUCCESSFUL EXPERIENCE

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INTRODUCTION

According to Cassiolato & Lastres (2000), the growing international competition and the need for introduction into production processes, the advances in information and communication technologies have led companies to focus strategies on the innovation development, which is essential, including to enable them to participate in the information and knowledge flows that mark the present stage of world capitalism. Another approach is cited by Steele and Murray (2004), who perceive the culture of innovation as a way of maintaining organizational competitiveness, indicating that “the agility and ability of an organization to respond to market changes rests with people’s intellectual capital.”

In the business context, Mambrini, Dattein, Medina, Cintho, & Maccari (2011) investigated managerial practices that help to promote the innovative culture and their contribution to the capacity with respect to small and medium-sized Brazilian companies, emphasizing that innovation is structured in ideas from both internal and external sources to gain competitiveness.

The main issues that contributed to a better understanding of the innovation process in the last years are:

- the recognition that innovation and knowledge (rather than being considered as marginal phenomena) are becoming increasingly visible as central elements of the dynamics and growth of nations, regions, sectors, organizations and institutions;

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- the understanding that innovation is a process of search and learning, which, depending on interactions, is socially determined and strongly influenced by specific institutional and organizational formats;
- the idea that there are marked differences between agents and their learning abilities (which reflect and depend on previous learning as well as on the ability to forget);
- the understanding that there are important differences between innovation systems in countries, regions, sectors, organizations, and others, depending on each specific social, political and institutional context.
- the view that if, on the one hand, codified information and knowledge present increasing transfer conditions - given the efficient diffusion of the TIs - tacit knowledge of localized and specific character continues to play a key role for innovative success and remains difficult (if not impossible) transferred.

The IFPB Campus João Pessoa has great potential for the dissemination and development of the innovation culture. In 2014, the Nucleus of Technological Innovation was instituted, currently Coordination of Innovation / CINOV, which initiated a meticulous work of incentive to activities related to technological, extensionist and social innovation.

Initially several contacts were made with innovative agents, lectures, participation in robotics events, conduction of search courses and writing of patents, startup day, among other actions, aimed at disseminating of the culture of innovation and gradually the academic community was appropriating the importance of innovation in their day to day. In the year 2016 was held the First Workshop of Innovation in the Campus and this year will be the 4th edition. In this event, there are: Robotics Olympics, Olympic Programming Marathon, Network Marathon and Hackaton, as well as lectures, mini-courses, workshops and exhibitions of products and processes that involve the entire academic community.

In view of the above, the researchers of IFPB Campus João Pessoa, both students, teachers and administrative staff, began to turn their attention to the importance of innovation and new products, computer programs and brands were developed and registered with INPI.

In 2017 the IFPB was the first in the ranking of the Federal Institutes of Education Science and Technology / IFs with regard to the registration

of patents residing with the National Institute of Industrial Property / INPI. “The patent represents a valuable asset and also a competitive resource available to organizations, given that it provides the domain of monopoly exploitation of a given product or production process, a privilege that can create or add value to the wealth of institutions, companies and their partners / inventors” (Ferreira; Guimarães, 2009).

We annually publish the internal notices of the campus, axis of innovation in which scholarships are offered for students and bench fee for the development of projects. With this action several innovative projects emerge and some generate registrations with the INPI.

METHODOLOGY

At the IFPB Campus João Pessoa, the Innovation Coordination - CINOV is linked to the Department of Innovation, Graduate Studies, Research, Extension and Academic Competitions - DIPPEC.

In order to promote the culture of innovation within the IFPB, especially on the João Pessoa campus, the Innovation Coordination (CINOV) has its main purposes:

- Monitor the processing of applications and the maintenance of intellectual property titles;
- Foster technological, extension and social innovation projects;
- Empowering the community with knowledge about research geared towards innovation;
- Hold events aimed at disseminating the culture of innovation to the academic community.

The first actions presented, already in the first year creation of coordination, was to establish a partnership with the National Institute of Industrial Property (INPI), through its representative in João Pessoa-PB, Dr Armando Mendes, for the next year (2015) to initiate a movement to disseminate the culture of innovation, through lectures, courses, meetings on industrial property issues, as a way to integrate the campus researchers and students from all areas, bringing them closer to the new reality, as well as encouraging them to create innovative solutions. These actions were fundamental because until then, knowledge about this

subject was unknown to some, there was the need to provide innovative knowledge and all the senses.

Another approach was to create a solid foundation for the culture of innovation. Planned to achieve effective results in the short and medium term, CINOV sought partnerships with other coordinators to promote events, in which it aimed to bring the student body of the institution to this theme in a playful and fun way, through professional practices, withdrawing of the student the “theoretical” weight of learning “innovation”.

In 2015, it established its first inter-coordination partnership by supporting the participation of 60 campus students in the Brazilian Robotics Olympiad (OBR), enabling a better participation in this competition, providing technical and administrative support, a commission was set up by order of the director of Campus João Pessoa from Order No. 213 of July 03, 2015, as requested by the Innovation Coordination. On this occasion, he would pass on the necessary reports to the competing students and seek to solve the existing demands. In addition, there was daily interaction between committee members and competing teams. The committee’s actions were guided by four aspects: the technical which aimed at pointing out technical solutions that would directly influence the training of the teams; the logistics, which aimed to offer the conditions of access and transportation to the participants; the financial, which aimed to obtain resources for the teams, and finally, the promotional, which aimed to internally disseminate the actions developed by the commission, and externally the IFPB-Campus João Pessoa, in order to publicize the institution before the general public participant of the OBR.

Since 2016, the event was held called the Innovation Workshop, which takes place annually during the Science and Technology Week (SECT). During this event, several activities are carried out: the Robotics Olympics, in which more than 4 modalities are held at different levels of knowledge, and the internal and external participating public of the institute develop their robotic prototypes to solve real problems, Olympic Programming Marathon POP , aimed at integrated high school and high school students, Computer Networks Marathon and Hackaton in which participants through a multidisciplinary team solve and present a solution to specific problems in the most diverse areas of activity.

Also during the SECT, the coordination of Innovation, promotes: lectures, circles of culture (in which the results of research projects and

innovative extension are presented in a methodology of sharing ideas), Exhibition of Products and Processes (in which the researchers present the projects developed in the campus), workshops and mini-courses, involving all academic community in actions considered as innovation base and being a great incentive for students, teachers and administrative staff.

RESULTS AND DISCUSSION

The actions of the Innovation Coordination achieved significant results at the national level, due to the local actions developed, which provided the institution's researchers with a vision focused on innovative thinking, as well as broadening the vision of our student body, reaching students from the integrated technical education up to postgraduate level.

In the year 2015, within the framework of the commission formed to enable students to participate in the OBR, it was possible to observe a synergistic and efficient commitment between this committee and the students, who devoted themselves daily and tirelessly to the training in their teams. After 4 days of competition, competing with approximately 200 teams from across the state of Paraíba in the qualifying stage, the IFPB-Campus João Pessoa won 4 places for the final stage in level 2 (aimed at high school students).

In the final stage, 31 teams competed in level 2, in order to conquer the 3 available positions for the national stage of the OBR, held in the city Uberlândia/MG. After 3 rounds of competition, the IFPB-Campus João Pessoa, won 2 of these vacancies. The IFPB - MACHINES and IFPB - ROBOCOPIA teams were successful, and won the 1st and 2nd place, respectively. The IFPB-400KV team won in addition to the 4th place, the award for best rookie team. In figure 1. it is possible to check the participants and the commission.



Figure 1. Participating Teams and the Commission

Continuing the activities of 2015, the lectures were presented “Course of Introduction to Industrial Property” and “Opportunities for Cooperation with Europe”, in which a total of 87 participants attended. Subsequently, the Patent Search and Writing course was given, reaching 24 people. In the scope of the research, there were 22 projects submitted by Edict 09/2015 - IFPB Campus João Pessoa Institutional Scholarship Program - Call for Promotion of the Technological Innovation Program, in which 13 projects were contemplated, directly involving 84 researchers.

In 2016 a new cycle of training courses promoted by the Innovation Coordination and INPI took place, in which 39 people participated in the “Patent Search and Writing Course”, representing a 62.5% increase in the number of participants in relation to the 2015 edition, and 51 participated in the “Intellectual Property Course”.

In the second semester, the 1st Innovation Workshop took place during the Education, Science and Technology Week (SECT) of the IFPB João Pessoa-PB campus, in which several events were promoted in the most varied areas of knowledge in order to create a basis for new inventors, and discover new talents. The Workshop, which mobilized around 200 participants, promoted the 1st Robotics Olympics, with internal and external participating public of the institution (Fig. 2); the I Challenge Hackthon; the Olympic Programming Marathon (POP), and lastly the Product Showcase of Innovative Processes, in which researchers should present to the entire community the projects developed. Besides these activities, there were paper presentations through cultural circles, a type of active methodology of knowledge exchange in which researchers interact with each other, mini-courses, lectures and workshops.



Figure 2. Some of the modalities of Robotics Olympics

In the first half of 2017, the coordination promoted the Patent Writing Course and the innovation event called “I Start de Ideas”, which aimed to transform ideas into business, addressing topics such as entrepreneurship, innovation and startups. The 50 participants were able to develop business ideas originating from the idealized thoughts during the event and daily contacts, focusing on problem solving. In the second half of the year, the II Innovation Workshop was held in which it was noted that there was an increase of 274% in the number of participants.

Finally, in the year 2018, all innovation actions were concentrated in the III Innovation Workshop. This edition consolidated the culture of innovation in the IFPB campus João Pessoa-PB because there was an increase of 142% in relation to the 2017 edition (from 429 to 611) and 389% to 2016 (from 429

to 611). During the SECT, CINOV had effective actions in the years 2015 to 2018. Several activities took place, involving: 24 lectures, 28 mini-courses, 11 workshops, 152 papers presented in cultural circles. There were integrated events to the Innovation Workshop during the events mentioned between the years 2016 and 2018: 3 Hackathon challenges, 3 Robotics Olympics, 1 Network Olympics, 2 Olympic Programming marathons - POP, 3 Product Showcase of Innovative Processes. The actions, and their respective absolute numbers, of promoting the culture of innovation, through the Innovation Workshop, are presented in table 1.

Table 1. Actions developed during the Innovation Workshop

Actions of the Innovation Coordination	2014	2015	2016	2017	2018
Innovation Workshop	0	0	1	1	1
Lectures	0	0	20	2	2
Offices	0	0	6	4	1
Mini-courses	1	0	17	5	5
Exhibition of innovative productions	0	0	5	2	4
Robotics Olympics	0	0	1	1	1
Network Olympics	0	0	0	1	0
Hackathon Challenge	0	0	1	1	1
Olympic Schedule Marathon	0	0	0	1	1
Circles of Culture Works	19	0	56	26	51
Round table	0	0	1	0	0
TOTAL	20	0	108	44	67

Table 2 shows the actions of CINOV in promoting and stimulating innovative thinking, the search for solutions to the community, and also the protection of researchers' ideas by making the registrations with the INPI.

Table 2. Actions developed to promote innovation culture

Actions of the Innovation Coordination	2014	2015	2016	2017	2018
Request for patent registration with INPI	2	0	5	13	6
Application for registration of software with INPI	0	2	4	1	4
Application for trademark registration with INPI	0	0	0	3	0
Projects contemplated - Call for proposals 09/2015 (fellows and volunteers)	0	13	0	0	0
Projects contemplated - Edict 06/2018	0	0	0	0	6
Volunteer Projects	0	2	1	0	3
Event log	0	0	0	1	0
Lectures	1	2	0	0	2
Course "Search and writing of patents"	0	1	1	1	0
Calls for general intellectual property training course INPI EAD	0	2	2	4	2
INPI intellectual property course with DIT	0	0	1	1	0
Start of ideas	0	0	0	1	0
TOTAL	3	22	14	25	23

CONCLUSION

Developing innovation is not an easy task, but it is done step by step with the participation of the entire academic community. Since the creation of the Innovation Coordination - CINOV in 2014, we believe that the IFPB Campus João Pessoa has taken a great step towards innovation development, especially thanks to the support of management and the effective participation of students, teachers and technical-administrative staff involved in all proposed actions and activities. All this work was crowned in 2017 when IFPB ranked 1st place among the Federal Institutes in resident patent deposits. In addition, many social and extension activities are being developed and causing great benefits to society.

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