Project Science with the Caboclas Kirimbaua Auaeté: undertaken actions in the context of Higher in the state of Amazonas, Brazil

Beatriz Albuquerque
beatriz.albuquerque@icomp.ufam.edu.br
Federal University of Amazonas
Manaus, Amazonas, Brazil

Inês Padilha
in_math@ufam.edu.br
Federal University of Amazonas
Manaus, Amazonas, Brazil

Juliana Miranda
jfmiranda@ufam.edu.br
Federal University of Amazonas
Manaus, Amazonas, Brazil

ABSTRACT

The project Caboclas Kirimbaua Auaeté is the result of the initiative of seven research professors from the Department of Mathematics of the Federal University of Amazonas (UFAM). Its main focus is to stimulate women of different ities for the exact scientific area and technology. The project has been carried out with the support of Brazilian agencies for the promotion of scientific research and dissemination, using both the structure of UFAM and the public schools involved. At the higher education level, the activities are aimed at enriching mathematical skills and disseminating scientific knowledge by non-academic women.

KEYWORDS

Women, social project, female empowerment, STEM fields.

1 INTRODUCTION

Research shows that there is a lower percentage of women in the scientific area compared to men. In the areas of Exact Sciences, Technology and Engineering, and in Mathematics, this percentage is sensibly lower [3]. In addition, recent work [2] states that while women are the majority in undergraduate and masters courses in federal universities, they are already in the minority among doctoral students, professors of masters and doctoral degree courses and among the research fellows.

Trying to improve this scenario in our academic environment, a group composed of 7 female PhD professors from the Mathematics Department at UFAM decided to join forces and promote actions that would increase female participation and their permanence in scientific activities. Promoting the development of skills in order to awaken the self-esteem of these women and encourage them to follow their career wishes to the highest degree possible was a priority of this project. The participation of people of all genders is welcome and we try to deconstruct some stereotypes rooted in society, increasing mutual respect and highlighting the protagonism and empowerment of everyone. We count on the collaboration of students from several courses who embraced the project’s cause and continue to actively work in the development of the project. The first version of the project had financial support from the National Council for Scientific and Technological Development of Brazil (CNPq) and was executed in 2019 in five schools in different areas of the city of Manaus, in the state of Amazonas. Continuing this work, of strengthening bonds and establishing good prospects for many women who are inspired by our work, the current version of the project had the financial support of the Amazonas State Research Support Foundation and tried to offer a differentiated vision of the education through the development of techniques and tools in mathematics.

The activities of this project were carried out along three axes: in the context of Basic Education, in the University context, and in the interconnection between the two. We highlight here the various initiatives that were carried out within the University context. Namely, scientific initiation projects (PIBICs), workshops and mini-courses. In addition, we have built partnerships with other projects within the University. Next, we will address each of the initiatives carried out within the University context, describing how they were executed.

UNDEUTNNEP ACTIONS WITHIN THE PROJECT

Some of the actions carried out during the Caboclas project at the University level were:

(1) SCIENTIFIC INITIATION PROJECTS (PIBIC): In order to employ scientific methodology through research development, we have developed 5 scientific initiation subprojects with undergraduate students as the executors. The developed Scientific Initiation projects are as follows:

• Academic Genealogical Tree: presents the construction of the family tree of some outstanding or historically relevant Brazilian female mathematicians for the development of mathematics in Brazil, emphasizing on the doctoral students they supervised.

• Identification of Women’s Withdrawal Profiles through Fuzzy Modeling: Case Studies in Exact Science Courses: development of a fuzzy inference model that describes the phenomenon of future withdrawals based on the length of the course, type of withdrawal, and recurring situations that encourage withdrawal.

• Undergraduate and graduate data survey/Visibility of success stories in Mathematics and Chemistry - data survey regarding the undergraduate and graduate education in mathematics and chemistry of women in the city of Manaus, giving visibility to the success stories in these areas in the city of Manaus.

• The history of the feminine in the Institutional Program for Scientific Initiation Scholarships (PIBIC) of the Mathematics course: Survey of the participation of women and their contributions in the Institutional Program for Scientific
In conclusion, it is worth noting that in all events organized in the scope of the project, the undergraduate students participated in the organizing teams and also in the idealization of the presented activities, such as workshops, mini-courses, exhibitions and poster presentations [1].

From the initial group of project members, 5 students completed their degrees in mathematics while they were part of the Caboclas project, and today they continue collaborating as volunteers: Ana Júlia Siqueira Amorim who volunteered to performing the PIBIC "Academic Genealogical Tree" and is currently a teacher in elementary school; Beatriz Albuquerque who had a scholarship in the project performing the PIBIC "Academic Genealogical Tree" and is currently doing a master’s degree in Computer Science in the Computer Department of UFAM; Karolína Vitória who was a volunteer in the project and is currently doing a masters degree in Mathematics in the Mathematics Department of UFAM; Brenda Ester who worked as a scholarship student in the project developing the PIBIC "A história do feminino no Programa Institucional de Bolsas de Iniciação Científica (PIBIC) do curso de Matemática" and is currently a teacher in elementary school; Simone Serudo who participated as a fellow in the project developing the PIBIC "Survey of undergraduate and graduate data/Visibility of success stories in Mathematics" and is currently taking the leveling course of the Graduate Program in Mathematics-PPGM of UFAM to prepare for the master’s entrance examination in 2024.

It can be said that the participation and protagonism of the students in all activities throughout the development of the project was of the utmost importance, thus contributing to their comprehensive training as citizens and professionals. According to their own reports, they were able to develop several skills such as communication skills, leadership, organization, teamwork, and expanded their knowledge about the various topics worked on during the project.

REFERENCES

CONCLUSION
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