Área: EDU

Development of an elective discipline: a contribution of scientific divulgation to the demands of public schools.

Ariane Carolina da Rocha (PG)[1*], Patrícia Regina da Silva (FM)[2], Ana Claudia Kasseboehmer (PQ)[1]

ariane.carolina.rocha@usp.br

[1]São Carlos Institute of Chemistry - University of São Paulo; [2]André Donatoni State School – Ibaté/SP

Keywords: scientific divulgation, teacher training, university, public school, action research.

Highlights

This study has important implications for discusses the use of science dissemination.
Continuing teacher education as a tool to bridge the gap between public schools and universities.
The potential of activities developed in a professional development group for reflection and improvement in the teaching practice of public school teachers.

Abstract

In order to contribute to the dissemination of the university, the Laboratory of Investigations in Teaching Natural Sciences (LINECIN) of the São Carlos Institute of Chemistry of the University of São Paulo (IQSC/USP) promotes interactive lectures in partnership with IQSC researchers to discuss the importance of scientific research and bring the community and public university closer together. One of the lectures was based on research by the Electrochemical and Environmental Processes Group (GPEA), which addresses aquatic and terrestrial contamination by dyes, drugs, and pesticides, presenting electrochemical processes as possible treatments for these contaminated matrices. Another way to contribute to scientific dissemination is through partnerships between the university and schools. These partnerships usually occur between university professors and elementary school teachers, who seek to reflect on teaching and learning practices in the classroom. Partnerships take place through continuing teacher education groups, specifically in professional development groups[1]. The objective of this paper is to present how an elective course developed through a partnership between a Chemistry professor, undergraduate students, graduate students, and university professors contributes to bringing the university closer to the public school. For the execution of the present work, action research was used, in which it seeks to unite research with practice[2]. In other words, action research applies to projects in which professionals seek transformations in their own practices[3]. Collectively, it was decided that one of the activities developed by the group in the year 2021 was the planning of an elective subject as it is a challenge posed to basic education teachers. Within the scope of Inova Educação, this subject is one of the curricular components that make up the Curriculum of the State of São Paulo. The discipline was called "I, the scientist", with the main purpose of introducing students to the scientific method and the role of the scientist in society. The discipline was applied to the eighth year of elementary school II of a public school in the interior of the state of São Paulo. The professor worked on concepts of chemical transformations, substances, and mixtures, relating them to the theme "Water". In addition, activities were carried out with the students based on the interactive lecture on scientific research by the GPEA. The students carried out a practical investigative activity that illustrates a technique used by the research group for the degradation of dyes in water samples. The students also watched a scientific dissemination video and participated in a conversation circle with a graduate student. The activities carried out in the discipline were designed to strengthen the partnership between the public school teacher and the university, in addition to bringing public education students closer to what is developed within universities by research groups, presenting possible solutions to the real environmental problems faced by the population.

[1] GOROZIDIS, G.; PAPAIOANNOU, A. G. (2014). Teachers' motivation to participate in training and to implement innovations. *Teaching and teacher education*, *39*, 1-11.
[2] KETELE, J.; ROEGIERS, X. (1993). *Méthodologie du recueil d'informations: fondements de méthodes d'observations de questionaires, d'interviews et d'étude de documents*. 2. ed. Bruxelles: De Boeck Université, p. 99.
[3] BROWN, A.; DOWLING, P. (2001). *Doing research/reading research:* A mode of interrogation for teaching. London: Routledge Falmer.

Agradecimentos/Acknowledgments

Brazilian National Council for Scientific and Technological Development - CNPq (Grant no. 465571/2014-0; ##304087/2021-1), São Paulo Research Foundation (FAPESP – Grants 2014/50945-4; #2017/10118-0), Coordination for the Improvement of Higher Education Personnel (CAPES – Finance Code 001, Grant 88.887.126/2017/00), Learning with the Community Program of the Dean of Undergraduate Studies and Dean of Culture and Extension at the University of São Paulo.