

THE NEED OF USING PLANNING METHODOLOGIES FOR PHYSICS TEACHING IN ACRE STATE, BRAZIL

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INTRODUCTION

Planning for secondary school in Brazil is based on the Law of Education Guidelines (LDB, 1996), and have been described in the National Curriculum Parameters (PCN, 2000), as well as in the Common National Curriculum (BNCC, 2016). The results of the Brazilian education evaluation in 2013 showed deficiencies in reading ability, text interpretation and problem solving. Data from the National Institute of Educational Studies and Research (INEP) confirmed this situation (ENEM 2014). Since 1970 there have been several attempts to introduce experimentation in Physics teaching for secondary school. Various programs have been established and high investments were intended for equipment purchasing for science laboratories in the Acre State, without success. Urgent reversal of the situation requires curricular planning.

OBJECTIVE

Determine the different aspects of the curricular planning that make it impossible to insert experimentation in Physics teaching for secondary school in Acre State.

METHODOLOGY

Study area

The study area is in Acre State, Brazil, in 15 urban regions of the total amount of 22 municipalities, shown in Figure 1. In that area, 51 secondary schools were object of research.

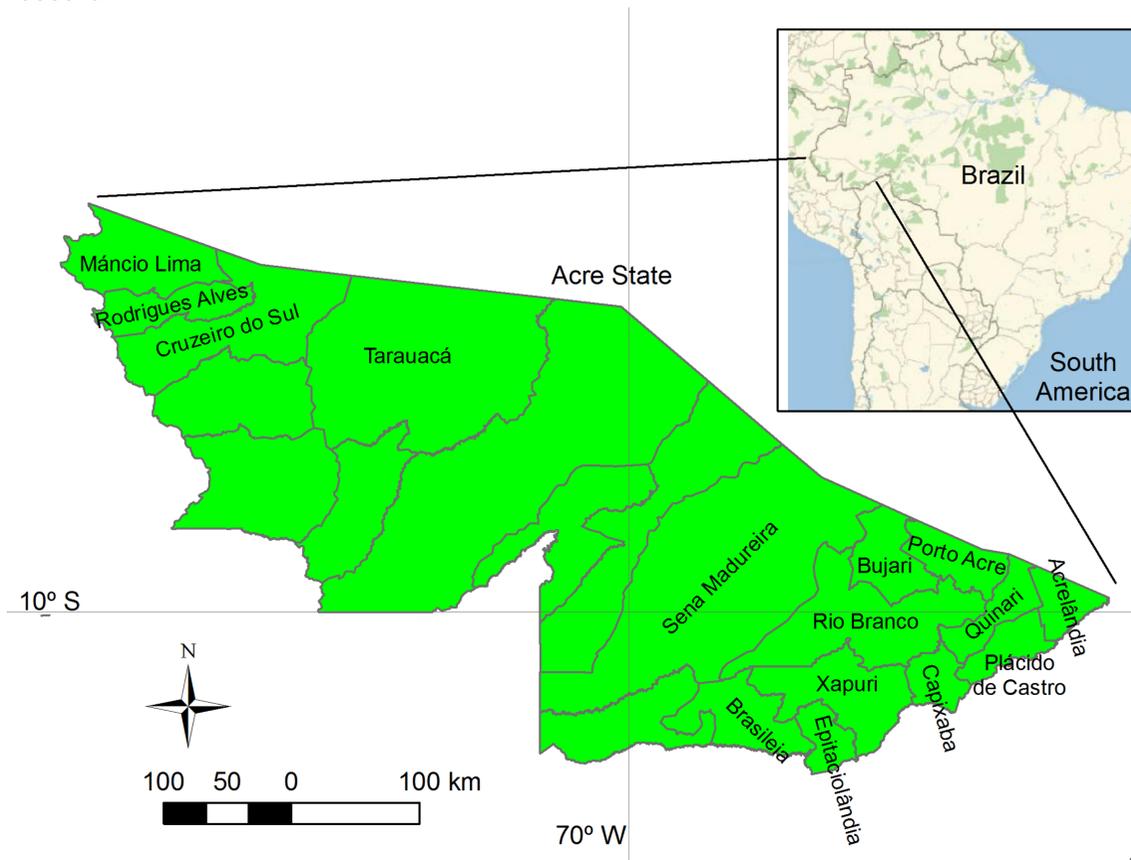


Figure 1. Acre State and the 15 municipalities where the 51 secondary schools being research object are distributed.

Information and data collection

Action Research was employed as defined by Ferrance (2000) as “a collaborative activity among colleagues searching for solutions to everyday, real problems experienced in schools, or looking for ways to improve instruction and increase student achievement”. Activities were developed with teachers, service and administrative staff of a school to grasp the process of project and plans elaboration. Field Research aimed at observing and interacting with schools staff in their natural settings to analyze laboratory conditions and integrated educational planning.

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RESULTS AND DISCUSSION

The Brazil National Education Plan (PNE, 2014) presupposes the broad participation of all education stakeholders (school staff, students, and organizations representing the civil society) in planning and implementing efficient arrangements. But observations and records made in this paper show that this expectation is not met. The process of collective construction of planning does not happen satisfactorily: problems and solutions are not identified by stakeholders, no ways are discovered to work differently, experimentation in Physics does not enter the school planning.

According to the classification given in Pereira & Duarte (2016) more than 90% of schools appear in Very bad or Bad situation in relation to the conditions of Physics laboratories and the integration of experimentation to the school curriculum (Figures 2 and 3).

Consequently, introduction of curricular planning for experimentation in Physics teaching is recommended.

More than 90 % of schools have laboratories in Very bad or Bad conditions

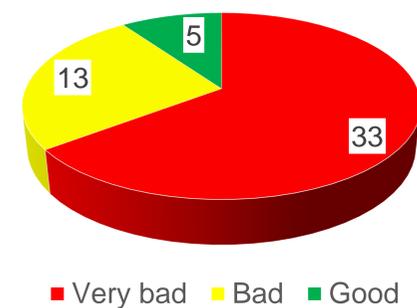


Figure 2. Number and conditions of Physics laboratories in secondary schools of Acre State.

The situation of laboratories interferes the integration of experimentation with curriculum planning and vice versa

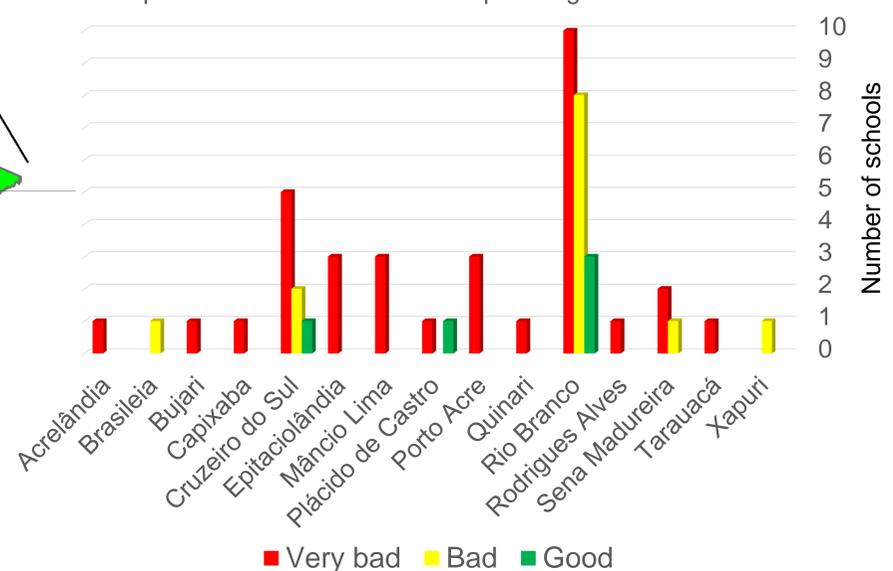


Figure 3. Distribution of the number and conditions of Physics laboratories in municipalities.

CONCLUSION

It is known that experimental activities contribute to improving knowledge. As observed in this work they are not part of educational planning, due to the general lack of laboratory conditions in secondary schools in the State of Acre. Consequently there is no effective contribution to the intellectual development of students, which is one of the objectives of the school. The urgency to change this situation involves the dedication of teachers and educational institutions.