

CONSIDERATIONS ABOUT THE DEVELOPMENTS IN PHYSICS EDUCATION RESEARCH OVER THE LAST DECADES

Roberto Nardi

Presenting Author: Roberto Nardi (nardi@unesp.br)
São Paulo State University (UNESP), School of Sciences, Science Education Graduate Program, Department of Education, Bauru, São Paulo, Brazil

KEYWORDS: Physics Education, Physics Education Research, Memories of researchers

In a recent study carried out with researchers considered by their peers as pioneers of science education in Brazil, we have found important factors for the constitution of this field of research, as well as the characteristics of research in physics teaching. Based on literature that addresses and compares the development of science and science teaching, we describe the evolution of research and graduate studies in physics teaching in Brazil, relating them to intrinsic (national) and extrinsic (international) factors. We note that, as in the development of science, science education is not neutral either and hinges on several conditions that interfere with classroom teaching. We will highlight current themes that are present in research events in physics education, such as teaching for people with special needs, the presence of women in physics, teaching physics to other minorities, decolonization, and the advancement of the problematization of teaching through socioscientific questions. We understand that these advances, in the case of the Brazilian context, were possible due to the redemocratization of the country. We propose other current issues for discussion that arise for teaching physics in Brazil, such as the gap between the production of knowledge in the area - in general at universities, via postgraduate programs and research groups - and teaching on the school grounds. We cite, for example, the lack of interest in the scientific career, the dropout rates in physics degree courses and among in-service teachers, which we regard as challenges in other countries as well. More recently, there have been issues such as the denial of science, the growth of fundamentalist sects and attempts to interfere in education by groups that advocate a “no-party school”.

FURTHER READING

- Aikenhead, G. S. & Elliott, D. (2010). An Emerging Decolonizing Science Education in Canada, *Canadian Journal of Science, Mathematics and Technology Education*, 10(4), 321-338, <https://doi.org/10.1080/14926156.2010.524967>
- Cassiani, S., Selles, S. L. E., & Ostermann, F. (2022). Denialism and Antiscience criticism: Decolonial questions. *Ciência & Educação (Bauru)* [online], 28 <https://doi.org/10.1590/1516-731320220000A>
- Kussuda, S. R. & Nardi, R. (2019). Some reasons that influence dropout in a Physics Teachers Training program. *Journal of Physics: Conference Series*, 1286, 012042. <https://10.1088/1742-6596/1286/1/012042>
- McIntyre, D. (2005). Bridging the gap between research and practice, *Cambridge Journal of Education*, 35(3) 357-382, <https://10.1080/03057640500319065>
- Nardi, R. (2016). Memories of Science Education in Brazil: the Research in Physics Teaching. *Investigações em Ensino de Ciências*, 10(1), 63–101. <https://ienci.if.ufrgs.br/index.php/ienci/article/view/523>

Proceedings of the IUPAP International Conference on Physics Education, ICPE 2022 5-9 December 2022, page 6, ISBN: 978-1-74210-532-1.