INNOVATIVE AND CREATIVE PERSPECTIVES FOR SCIENCE AND MATHEMATICS TEACHING IN THE IBERO-AMERICAN CONTEXT

PERSPECTIVAS INOVADORAS E CRIATIVAS PARA A DOCÊNCIA EM CIÊNCIAS E EM MATEMÁTICA NO CONTEXTO IBERO-AMERICANO

PERSPECTIVAS INNOVADORAS Y CREATIVAS PARA LA ENSEÑANZA DE LAS CIENCIAS Y LAS MATEMÁTICAS EN EL CONTEXTO IBEROAMERICANO

Ettiène Cordeiro GUÉRIOS[1]
e-mail: ettiene@ufpr.br

Edvonete Souza de ALENCAR[2]
e-mail: edvonete.s.alencar@hotmail.com

Organizers

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[1] Federal University of Paraná (UFPR), Curitiba – PR – Brazil. Professor of the Postgraduate Program in Teaching Theory and Practice and the Postgraduate Program in Education. PhD in Education (UNICAMP).
[2] University of Brasília (UnB), Brasília – DF – Brazil. Adjunct Professor (level III). PhD in Mathematics Education (PUC/SP).

This dossier is made up of research that offers support for teaching Science and Mathematics from a creative and innovative perspective. Having the Ibero-American context as its scope, it includes 18 articles with the participation of authors from international institutions and authors from all regions of Brazil. The articles focus either on creativity and inventiveness conceptually addressed, or on creative and innovative practices, as well as themes that contribute to the topic at hand. The topics covered include inclusive education, literacy/scientific and technological literacy, teacher knowledge, interdisciplinary practices and teaching perspectives, such as problem solving, use of reflective tasks, portfolios, workshops, science and mathematics clubs.

This dossier assumes that innovation and creativity are constitutive vectors of a pedagogical practice aligned with the emergencies typical of the 21st century, which demand autonomous people with strategic thinking to act in this globalized world with planetary dimensions that contains us. We understand that the areas of Mathematics and Science are essential areas for the development of strategic thinking, given the dimension of the cognitive processes that are inherent to them. From this perspective, teaching practice assumes a preponderant position for the development of people with the announced characteristics, from pre-school to higher education.

Briefly, we present them below.

Gabiec and Baade carried out action research with 21 students and bring us reflections on how workshops can be beneficial for developing training actions for a group of mathematical literacy teachers.

Santos, Alves and Pereira bring the investigation carried out during initial training in the Pedagogy course, in which the authors mention the teaching strategies used in two subjects to reflect on the teaching of science and mathematics.

Medina corroborates the authors Santos, Alves and Pereira and also shows how reflection on practice and actions in initial training are necessary for students to understand the relationship between theory and practice.

Magno and Gonçalves consider the use of the Science Club as an innovative and creative perspective and argue that teachers need to be open to new ways of teaching.

Lopes Borowski and Cunha, as well as Magno and Gonçalves, consider the use of Club interesting for teaching, but these authors bring the specificity of using Club to teaching Mathematics.

Allevato, Possamai, Cai, and Capobianco consider that the way in which the problem-solving methodology is developed can contribute significantly to student learning.

Ribeiro and Silva, in turn, mention that the tasks and how they are prepared and presented, in addition to being able to significantly contribute to the development of teachers' reflections and that they, then, improve their actions in the classroom.

Like the previous article, Gutierrez-Fallas considers tasks to enhance teacher reflection. Therefore, he presents a task proposal and discusses it in his investigation.

Ferreira and Oliveira bring the use of portfolios as an innovative and creative perspective, especially in internships in the chemistry course and how they can be beneficial for recording and reflecting on the actions developed.

Guérios, Zimer and Agranionih present the pedagogical residency program as an innovative and creative potential for the training of teachers who will teach mathematics.

Tavano and Sambugari carried out a bibliographic survey on research in the Ibero-American Journal of Studies in Education and this sought to identify possible ruptures and innovations in the investigations already published.

Maura Silva and Simão contribute to reflecting on how innovative practices have been approached through creative thinking. The authors, as in the previous article, carried out a bibliographical survey on the topic to develop the investigation.

Rosas, Almeida and Ribeiro focus on inclusive education and the importance of carrying out differentiated actions so that teachers know how to work with students with Autism Spectrum Disorder (ASD).

Alencar and Lautenschlager bring results from two investigations in which they try to answer how teachers learn mathematics and what possible strategies we can use to make this knowledge come to fruition.

Cerdas and Mianutti consider cognition as an enhancer of Science and Biology learning. Silva Nogueira and Rodrigues, in the same vein, consider that scientific literacy helps in professional and technological training courses.

In line with the two previous articles, Rodrigues and Ricardo highlight scientific literacy and consider it important for Science teaching and learning actions.

Barreira, Moura Silva and Gonçalves bring the use of CHAT GPT as a creative technological resource for teaching mathematics.

Rosa, Xavier and Andrade, finally, deal with a proposal for the use of cinematographic art carried out in experiments for teaching science.

We wish you all a great read!

Ettiène Cordeiro Guérios and Edvonete de Souza Alencar

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