**POSTER TEMPLATE**

## PROBLEM POSING AND COMBINATORY ANALYSIS: CLASSROOM VIGNETTES

Adriano Alves da Silveira

Universidade Estadual da Paraíba – UEPB


Silvanio de Andrade

Universidade Estadual da Paraíba – UEPB

*The present article emphasizes that the Mathematics Problem Posing must occupy a prominent place in the classroom. Subsequently, we bring an episode from the classroom that shows the work of students in combinatorial analysis problem posing. In turn, we noticed that the students have found it easy to interpret their posed problem, being able to relate mathematics ideas to their daily experience.*

### COMBINATORY ANALYSIS PROBLEM POSING IN THE CLASSROOM

Jurado (2016) points out that a natural issue in teaching and learning mathematics via problem solving is due to the fact that restricted to problems that were created by other people. The researcher points out that there are very good problems created by mathematicians and mathematical educators and they can be very useful for certain circumstances of teaching or learning. However, each student has their peculiarities, motivations, difficulties and requirements, as well as their own socio-cultural environment and their set of previous experiences and knowledge.

We will bring here, classroom dialogues that evidence the work of students in Combinatorial Analysis problem posing. The reported episode occurred in a class of the 2nd year of high school in the city of Alagoinha-PB, Brazil.

We have had several evidences that prove that the students tried to articulate the written text with the essential ideas of the different types of Combinatorial problems. For the ideas to be expressed clearly, it was necessary to know the real context in which a given situation was inserted. A clear example of this was carried out by the G1 group when challenged to propose a problem with the word BARALHO. Observe the dialogue with the teacher-researcher (PP):

G1: How are we going to elaborate a problem with the word *baralho*?
PP: Would it be important for you to know how many cards a *baralho* has?
G1 (Student 1): It is from 1 to 10.
G1(Student 2): It is not from 1 to 9 plus the king, queen, ace and jack, in this case 13 cards.
PP: And how many suits?
G1(Student 3):4 suits. In the case four times thirteen, fifty-two letters.

The above dialogue resulted in the posing of the problem: "A complete *baralho* consists of four suits, each with thirteen cards of: gold, hearts, spades and clubs. a) What are the possibilities of taking two kings? b) How many possibilities to draw 2 cards?" It was noticed that, when structuring the ideas in an organized way, it is essential that the problem posing has connection with the student social context. Thus, the successful posing of the G1 group is the result of their daily experience and the understanding of the mathematical concepts that were being constructed.

### References

Jurado, U. M. (2016a). Creación de problemas. Avances y desafíos en la educación matemática. REMATEC, v. 11, n. 21, p. 79-90, 8 nov.