

**TITLE:** CONSTRUCTION OF MICROBE-CELL MODELS IN CELL BIOLOGY TEACHING

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**ABSTRACT:**

Teaching undergraduate students a science thinking way, without a content focus but in a problem-solving manner, is a challenge. Microorganisms diversity of structures, physiologies, ecological functions, interactions with other cells, and its relevance in agronomic field may be explored to achieve this goal. Modeling is a common practice in natural sciences, to better comprehend natural systems, and the use of models construction is proposed as a mean to teach cell biology. To test this strategy, the construction of microbe-cell interactions models were proposed in the Cell Biology discipline, of an Agronomic College. The course, essential to obtain a degree, is offered at the first year. The activity was to create models with stationery materials or web programming (scratch.mit.edu) of microbe-cellular interactions important in the agronomic field (plant-bacteria, plant-fungi, virus-bacteria, virus-animal, bacteria-plant). The evaluation took place in three moments: beginning (questionnaire for evaluation of preliminary knowledge); intermediary (presentation of a project for the construction of the model); final (presentation of the model). In the last stage, the preliminary evaluation questionnaire was applied again, as well as a questionnaire of perceptions about the activity. The grades of the students showed an increase of more than 50% after modeling, comparing to the grades at the beginning of the course. They evaluated the activity as important to their formation, especially to comprehend cell interactions and the actual themes related to their field. This activity was considered only 10% less important than theoretical and practical classes, considering the contributions to learning about cell dimensions, cell-interactions, identification of cell structures, and applications of knowledge to practical proposals.

**Keywords:** undergrad teaching, cell modeling, problem-learning, teaching strategies

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