

**TITLE:** DIGITAL GAME-BASED LEARNING: USING TECHNOLOGY FOR INNOVATION IN TEACHING MICROBIOLOGY

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**ABSTRACT:**

Serious games are gaining relevance in teaching-learning due to their ability to enhance the student's knowledge through non-traditional methods. In Digital Game-Based Learning, the content is adapted to a story. This strategy contributes to developing abilities such as critical thinking for the resolution of problems, besides an increasing interest in the discipline. However, the wide use of this tool is even limited due to the requirement of technological knowledge for its development. Thus, we aim to develop a digital game for microbiology teaching, taking into account the game preferences of students from a higher education biomedicine course. After consent by signing a consent form, 23 students answered a questionnaire provided by Google forms about the type of game that most interested them, whether they were interested in a game for bacteriology learning, and internet access availability. All research subjects had regular access to the internet and would like a playful learning strategy. Adventure, campaign, strategy, and trivia games were the most voted. In sequence, a digital game was developed on the RPG MAKER MV platform contain microbiology topics included in the curriculum in the biomedicine course. We developed an RPG game design. The microbiology contents are inserted in a fictional story that unrolls in Gramcity place, whose goal is to resolve problem situations until the player becomes a recognized microbiologist. The first challenges have a basic level, structured with questions and analysis of bacteriologic slides. The next steps are more challenging and require exploration of the scenario. As support, the player is offered texts, short videos, and talks to NPC (non-playable character). In the last stage, the player faces a problem case and must act quickly. The game's script uses convenient dialogues and true situations. Thus, given the limitations imposed by pandemic Covid-19, the Gramcity game is an innovative technological tool for microbiology teaching which provides dialogue with the current social context and valorizes cognitive stability through reinforcing curriculum content.

**Keywords:** technology, innovation, game, microbiology, teaching

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