

# Review of: "Enhancing Science Education with Learning Management System for Effective Learning Outcomes"

Rafael Morales Gamboa<sup>1</sup>

<sup>1</sup> Universidad de Guadalajara

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Learning Management Systems (LMS) have a relatively long tradition in e-learning; that is, Blackboard and Moodle are over 20 years old. LMS have been along time by very well known e-learning universities such as the UK Open University, the Open University of the Netherlands, and the Universitat Oberta de Catalunya, and a myriad of smaller universities and e-learning units of traditional universities. The beginning of the MOOC movement in 2012 and its consolidation to today widespread acceptance in the global educational and training systems is technologically based on the existence and capabilities of LMS. Finally, besides the use of videoconferencing and social networking systems, it was the use of LMS that supported formal education during the COVID-19 pandemic.

Along the proliferation of educational experiences with LMS, we have been accumulating criticisms to the technology and its use. Among them, perhaps the most important is that they model education in the new digital environment using the traditional school schema for organizing education in levels, groups, classrooms, beginning and end of terms, so they deter more than encourage innovation in educational management and practices.

The experiences, benefits and drawbacks of LMS have been amply presented in the literature up to day. A simple search for 'learning management system' in Google Scholar, a free of use reference library available on the Web, produces over six million results.

All this suggest that a paper on the potential benefits (plus some difficulties) of using an LMS for supporting science education, without any empirical support, is out of context in the global, over twenty years old, experience with this systems. Of course, it may be relevant in many local and national contexts, such as in Nigeria.

Regarding the more specific aspects of the writing of the paper, the authors make very many strong claims without providing argumentation nor references supporting them. Overall, I observe an over optimistic view of LMS in science education that can only be explained on the basis of lack of experience using them.