Review of: "Integrating Virtual Tools Into the Face-To-Face Teaching of Undergraduate Analytical Chemistry"

Amos Onyedikachi Anele

Potential competing interests: No potential competing interests to declare.

This study successfully explores the integration of virtual tools with traditional teaching in undergraduate analytical chemistry at the National University of Luján, highlighting the shift towards a hybrid educational model due to the COVID-19 pandemic. It provides a thorough comparative assessment of pedagogical tools and surveys student preferences, advocating for a balanced blend of face-to-face and virtual learning.

The paper's strengths include its relevance, detailed examination of both student and instructor perspectives, and the practical application of its findings to enhance course delivery. Notably, it demonstrates the value of asynchronous virtual tools for theoretical content and the essential role of hands-on laboratory experience. The use of simulation software as a complementary tool in practical laboratories is a significant contribution, offering an innovative approach to teaching complex concepts.

However, the study could be enriched by a more detailed analysis of learning outcomes and the impact on students' skills development. Further exploration of the hybrid model's scalability and its broader applicability would also enhance its contribution to the field.

Overall, this paper is a valuable addition to the discussion on hybrid education models in analytical chemistry. With minor revisions to deepen the analysis of educational outcomes, it is well-suited for publication. Its findings provide meaningful insights for educators adapting to hybrid teaching methods, emphasizing the need for adaptable and innovative educational strategies.