

Review of: "Implementing Simulation Software to Develop Virtual Experiments in Undergraduate Chemical Engineering Education"

Shawn Gouws¹

¹ Nelson Mandela University

Potential competing interests: No potential competing interests to declare.

Review article.

The article is well-constructed and discusses the need for virtual experiments in an undergraduate chemical engineering programme. This article highlights the importance of the transition period from traditional teaching to a student-centred, hands-on approach. The authors pinpoint the steps taken in conducting the virtual experiments, making it clear to the students how to approach the learning experience. The article further illustrates the plan flow diagrams utilized in various chemical plants, such as stir tank reactor operation, distillation, and reactor designs. The students can measure and manipulate various process control parameters to obtain accurate energy and mass balance results. These data points can then be plotted and expressed as graphs so that students can interpret the data and adjust if needed to improve overall performance. Assessment is also done effectively to measure the impact of virtual experiments on the students' training.

References

The references used in the text are a good mix of current and older references and are well-supported throughout the text.

Well done to the authors. I recommend this paper.