# Is Blended learning delivery as effective as 100% face-to-face delivery for qualified critical care nursing programs – an evaluation of the outcomes?

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## Introduction

A national blended learning framework was introduced to train 11,000 critical care nurses within the next few years[1]. While the efficacy of blended learning as a successful mode of education has been supported by evidence[2], there is a high degree of variation in approaches towards blended learning delivery[3].

The national blended learning framework stipulated that 70-90% of the course should be asynchronous learning. In our 20-week course, four campus study days were allocated for face-to-face interactions, and 16 weeks were attributed to asynchronous learning.

As part of our efforts, we adopted the Community of Inquiry (CoI) model developed by Garrison *et al*[4]. This model presents a comprehensive theoretical framework that outlines three interconnected presences crucial for fostering effective blended learning experiences: social, cognitive, and teaching presence.

This included using enhanced learning technology applications such as; MS Teams®, Canvas®, Padlet® and Mentimeter® to create social, cognitive and teaching presence.

## Aims

The objective was to evaluate whether delivering a qualified program using blended learning would result in similar academic achievements compared to the 100% face-to-face (F2F) delivery method.

## Methods and Materials

The study compared students' academic achievements between those that completed a 60-credit module using 100% F2F and blended delivery within the same academic year.

The assessment methods, unseen exam and written essay, and as well as the marking criteria were kept the same for both delivery methods. The marks in each delivery method were compared using Excel® and analysed for each assessment.

## Results

F2F delivery mean marks: exam = 57% (n=26), and essay = 63% (n=29). Blended delivery mean marks: exam = 63% (n=46) and essay = 59% (n=46). Occurrence of F2F exam resits = 19.2% (n=5) and essay resits = 13.8% (n= 4). Comparatively, the occurrence of blended delivery exam resits = 8.7% (n=4), and the essay resits =15.2% (n=7).


Mean marks F2F vs Blended learning
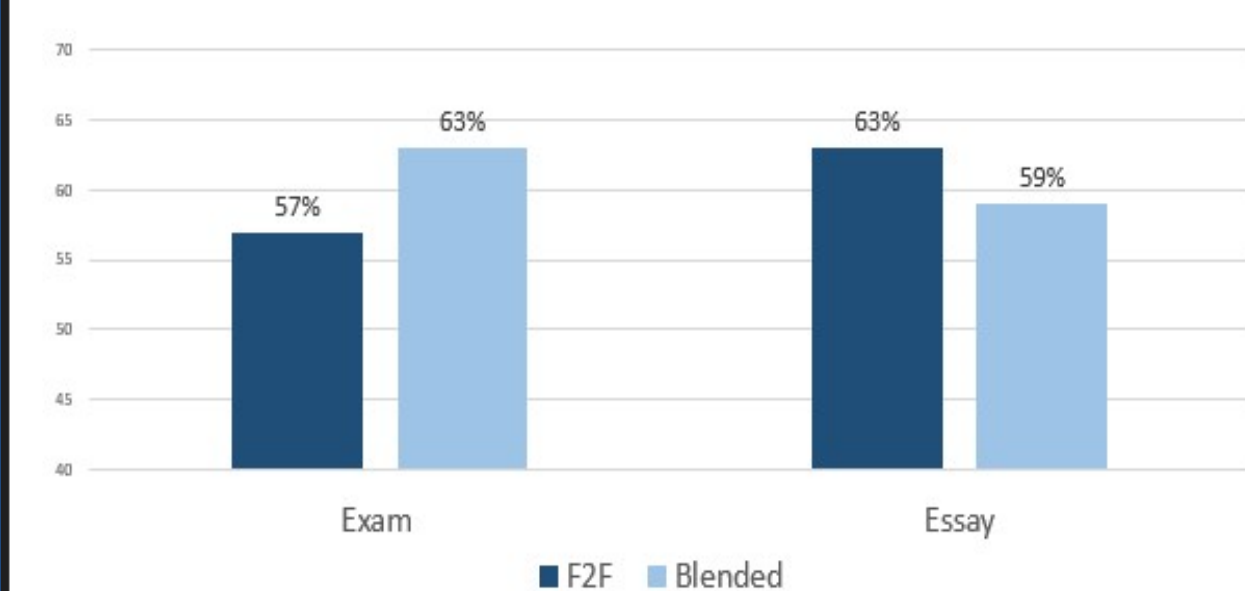
## Discussion and Recommendation

Based on the results of the study, it was observed that there were similar academic achievements between the different modes of delivery. However, it is important to acknowledge the limitations of the study. To gain a more comprehensive understanding of the effectiveness of the blended learning program, it is crucial to consider student perceptions and satisfaction, going beyond solely focusing on academic achievements.

In order to evaluate the overall learning experience and assess how well the program meets the different presences of the CoI model[4], we are currently in the process of developing an ethics application. This comprehensive assessment will provide valuable insights into the effectiveness of the delivery methods and their alignment with student needs and preferences.

By incorporating student perspectives and feedback, we can identify areas for improvement and refine the delivery methods accordingly. This iterative process ensures that the blended learning program evolves in a way that maximises its impact on student learning outcomes and enhances the overall learning experience. Ultimately, this feedback-driven approach will contribute to the continuous improvement of the blended learning program, fostering a more engaging and effective learning environment for our students.

## Limitations

1. The study compares students' academic achievements in two different delivery methods F2F, using a relatively small sample size.

2. Another limitation is the potential for confounding variables. The research does not account for other factors that may have influenced the students' academic achievements, such as their prior knowledge or experience in critical care or motivation.

3. The study does not explore student perceptions or satisfaction with the different delivery methods. Assessing student experiences and attitudes towards the blended learning programme versus F2F delivery could provide valuable insights into the acceptance of the approach..

## Conclusions

The study showed similar academic achievements between the different modes of delivery. Conclusions regarding statistical significance could not be applied due to the small cohort size.

However, it was reassuring that the change in delivery mode did not affect overall student outcomes.

With the increase in demand for critical care nurses, it is crucial to continue exploring effective educational delivery methods to meet current and future workforce needs.

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