Background

Major challenges face today's healthcare system in a rapidly evolving, technology-mediated world, for which healthcare professionals have to be prepared [1, 2]. Critical thinking (CT) is a 21st-century skill that every healthcare student needs to possess to approach these challenges [3]. The American Philosophical Association (APA) Delphi study by Facione (1990) defined CT as a combination of two dimensions, namely cognitive skills and dispositions [4].

Aim(s)

This study aimed to evaluate the effect of a blended curriculum on healthcare students' CT skills and dispositions.

Methods

A one-group pre-test/post-test study was set up during the Past, present, and future healthcare course in the bridging program Master of Science in Nursing and Midwifery and Master of Science in Systems and Process Innovation in Healthcare at Hasselt University. The course consisted of a blended learning concept (*i.e.,* online learning, debating, and reflective paper writing). Students were asked to complete a self-assessment using a 5-point Likert scale (1 = weak, 2 = room for improvement, 3 = acceptable, 4 = good, and 5 = excellent) [4]. The final questionnaire also included open questions to evaluate the impact of the didactical methods on CT. The Likert-style questions were analysed using the Mann-Whitney U test or Wilcoxon Signed-Rank test, as appropriate. Open questions were analysed using thematic synthesis. The level of statistical significance for all analyses was set at 0.05, and the analyses were performed using SPSS 28.0 (IBM, Chicago, IL).

Results

From 68 students, 47 (69%) completed the pre-test, and 35 (51%) completed the post-test questionnaire. For 24 students, a matched-pair sub-sample was available. In the unpaired sample the cognitive skills: questioning information, formulating conclusions, evaluating credibility, detecting bias, and self-examination significantly improved during the course (Pre-test, Med [range]: 3 [2-4], 3 [2-4], 3 [2-3], 2 [2-3], 3 [2-3], resp.; Post-test, Med [range]: 3 [3-4], 3 [3-4], 3 [3-4], 3 [2-3], 3 [3-4], resp.; Mann-Whitney U test, Ps<.05). Considering the dispositions, no significant differences were found between the pre- and post-test questionnaires in the unpaired sample. Analysis of the matched pair showed significant improvement in all the CT skills (interpretation, analysis, inference, evaluation, explanation, and self-regulation; Pre-test, Med [range]: 3 [2-4]; Post-test, Med [range]: 3 [3-4]; Wilcoxon Signed-Rank test, *P*s < .05). Analysis of the matched pair showed a significant enhancement of the dispositions: seeking truth, analyticity, self-confidence, and cognitive maturity (Pre-test, Med [range]: 3 [3-4], 3 [3-4], 3 [2-3], 3 [2-3], resp.; Post-test, Med [range]: 4 [3-4], 4 [3-4], 3 [2-4], 3 [3-4], resp.; Wilcoxon Signed-Rank test, Ps<.05). The didactical methods that contributed the most to students' CT were the e-learning module (63%) and debating (60%), followed by writing a reflective paper (43%) and the in-class session (40%).

Discussion

The blended curriculum positively affected students' CT skills and dispositions. The most stimulating methods for CT seemed to be online learning modules and debating.

Implications and future perspectives

Further research is needed in a larger student group with objective and subjective measurement tools to evaluate the true impact of blended learning on students' CT skills and dispositions.

References

1. Organisation for Economic Co-operation and Development, 2022
2. World Health Organization, 2023
3. Saroyan, A., 2022
4. Facione, P.A., 1990