

Action research project

This manuscript is part of an action research project (Tekin & Kotaman 2013; Swanwick et al., 2019) focusing on the development, implementation, and evaluation of a concept map (CM) based pedagogical intervention to facilitate clinical reasoning skills among undergraduate students in the management of multimorbidity patients.

Building on our literature review (Fonseca et al., 2023) and our experience teaching pre-clerkship Pathophysiology at NOVA Medical School (Rendas et al., 2006; Fonseca et al., 2020) we conducted a qualitative study with clerkship medical students (Fonseca et al., 2024). In this exploratory study applied to the Family Medicine curriculum for fifth-year medical students, we asked students to construct CMs to represent the clinical information of a patient with multimorbidity. We found that CMs promoted integration of clinical information and supported development of patient management and treatment plans. The identified educational impacts appeared to be directly related to the use of CMs and not simply to the intervention itself. However, a control group would be beneficial for drawing more definitive conclusions. To optimize CM implementation, we identified several key elements: providing clear instructions for map construction, using user-friendly software, allocating sufficient time for the task, encouraging group discussion of CMs, and incorporating tutor feedback throughout the map creation process. We reviewed the educational session to address the identified points within the time constraints and general rules of the course and designed a large-scale implementation plan, as described in this study.

The educational session included a pre-class assignment, which allowed students to construct individual CM beforehand. They would then receive tutor feedback and refine their maps collaboratively during face-to-face session. Students were instructed to use specific software for map creation.

This session was first implemented in October 2022 with a class of 18 students. We refined the educational session based on student feedback and the research team's reflections. These refinements included reducing individual student workload, increasing time for group discussions, and offering students the choice of constructing CMs on paper or using software, based on their preference. The research team also created a video tutorial with clearer instructions for CM construction, as students were unintentionally influenced by the map construction rules used in the pre-clerkship Pathophysiology course. The overall project structure is illustrated in Figure 1.

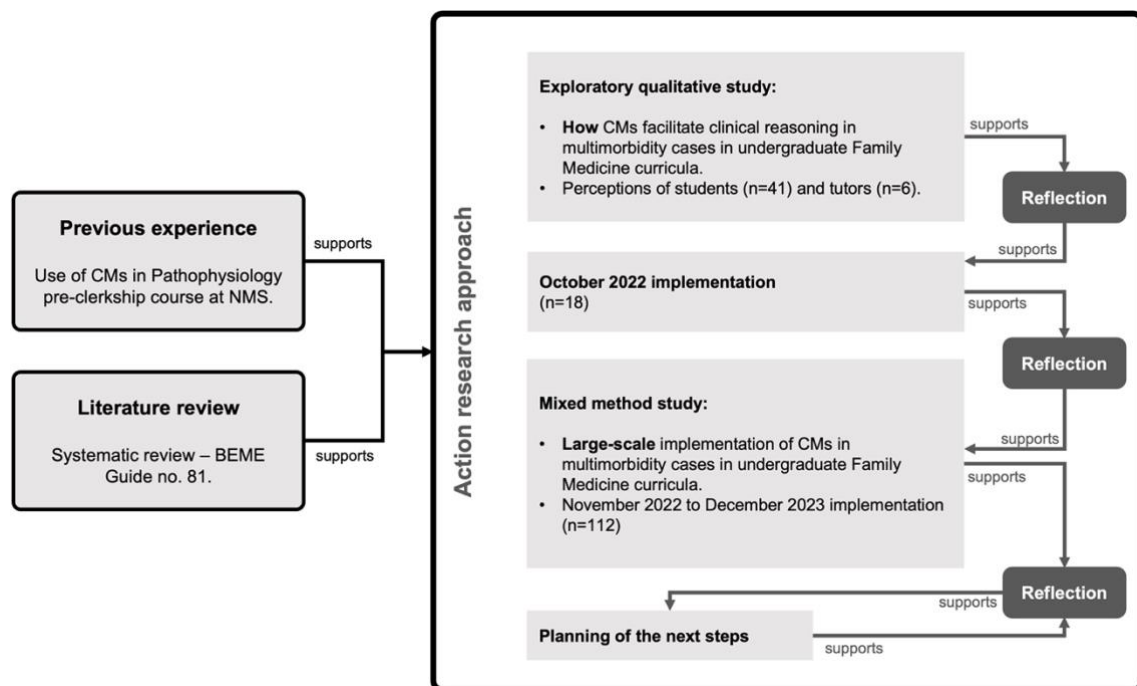


Figure 1 The three components of the action research project: systematic literature review, exploratory study, and large-scale implementation study. Abbreviations: BEME, Best Evidence Medical Education; CM, concept map; NMS, NOVA Medical School.

References

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Additional Supporting Information 1

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