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The Essential Components of Co-creation in Health Professions Education: A Scoping Review Protocol

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Early view

ABSTRACT

Curriculum co-creation is a collaborative process where students and faculty jointly design curricula and pedagogical strategies. While it promotes innovation, engagement, and mutual learning, limited methodological detail exists on how students are actively involved, particularly in health professions education. This scoping review aims is "to explore existing literature to identify key components of co-creation" where students and faculty share decision-making in curriculum, assessment, and teaching methods. The guiding research question is: "What key components of co-creation in higher education are reported in the literature?"

The review will follow the Joanna Briggs Institute (JBI) methodology, using a three-phase search strategy across Scopus, PubMed, Google Scholar, ProQuest, and ScienceDirect. It will include qualitative and quantitative peer-reviewed articles, dissertations, and grey literature published in English from June 2014 to June 2024. Studies involving passive student roles, unpublished or non-English sources will be excluded. Extracted data will be synthesized to identify core components of co-creation. Findings will inform the development of a structured implementation framework and be disseminated through medical education journals and conferences.

Early view

Keywords: *Scoping review, Co-creation, Health professions education, Higher education.*

INTRODUCTION

Curriculum co-creation is a collaborative process where staff and students work together to develop curricula and pedagogical approaches (1). This method aims to incorporate students' ideas into curriculum development, creating a continuous, creative, and mutually beneficial process of shared

decision-making (2). High levels of student and staff involvement are achieved when teachers encourage learners to participate actively in shared decision-making, leading to innovative teaching and learning techniques (3–5).

Curriculum co-creation involves innovative teaching and learning strategies that enhance the educational process and build resilience among participants (4, 6–8). Strong working relationships between students and faculty, fostered through co-creation, often lead to positive outcomes and meaningful educational experiences (9–12).

The literature suggests that curriculum co-creation enhances personal and professional development by fostering debate, collaboration, and collective decision-making (6, 13, 14). It also encourages democratic involvement, inspiring students to engage as active citizens in their broader communities (4, 15).

In addition to students and teaching staff, curriculum co-creation often involves a broader set of stakeholders, including academic developers, curriculum administrators, quality assurance professionals, and, in some contexts, external partners such as clinical educators and community representatives. These stakeholders contribute domain-specific knowledge, institutional perspectives, and structural support, enriching the co-creation process and helping to align curricular innovations with both academic standards and real-world needs.

Despite the growing recognition of curriculum co-creation in enhancing educational experiences, there is a significant gap in the methodological details of student involvement in co-creation, particularly in health professions education. Existing literature predominantly focuses on the US and UK, emphasizing equitable partnerships and student empowerment. However, few studies address the conceptual foundations necessary for effective co-creation or provide detailed methodologies for its implementation (16).

Early view

There is a need to formalize students' roles and develop handover systems to ensure the scalability and sustainability of co-creation efforts (16). Addressing these gaps requires further research to identify the essential components of co-creation and to develop structured frameworks and tools for its implementation.

Therefore, the objective of this scoping review is to explore existing literature to identify key components of co-creation in higher education.

This review is guided by the following research question:

"What key components of co-creation in higher education are reported in the literature?"

METHODS AND ANALYSIS

This protocol is developed in accordance with guidelines provided by the Scoping Review Methodology Group of the Joanna Briggs Institute -JBI (17). This review process will be carried out between 29th Jun-29th July-2024. Any changes in the methodology will be reviewed and documented in the final scoping review.

A preliminary search has been carried out and no related reviews are identified on this topic. Thus, it is deemed important to carry out a scoping review based on the proposed scoping review methodology (17). A scoping review represents a relatively recent addition to the repertoire of evidence synthesis research methods, distinguishing itself from traditional approaches such as systematic reviews and meta-analyses (17, 18). The aim of this scoping review is to systematically map the essential components of curriculum co-creation involving students, academic staff, and other relevant stakeholders within the context of higher education, including undergraduate medical education. This review seeks to identify how co-creation has been conceptualized, implemented, and reported in the literature, with the goal of informing future educational practice and research.

Early view

Review Team

The reviewer team comprises 4 medical educationists from different institutes in Malaysia and Pakistan (TA, RAK, NSR and MSBY) with vast experience in medical education.

Inclusion criteria

The inclusion criteria for this review will be developed using the Population–Concept–Context (PCC) framework, as recommended by JBI, to ensure clarity and consistency in the selection of sources, Table 1.1.

Population

This review will include studies that focus on students and teachers engaged in co-creation within medical and higher education contexts. Eligible studies may include the perspectives or experiences of students, teachers, or both. To meet the inclusion criteria, both students and academic staff must be actively involved in collaborative decision-making processes. Studies involving other stakeholders (e.g., administrators, external partners) will only be included if they are part of co-creation efforts alongside students and teachers. Co-creation projects that do not involve both a student and a teacher will be excluded. Additionally, co-creation in postgraduate education, patient-provider collaborations in clinical settings, or non-academic community partnerships will be excluded.

Early view

Concept

The review will focus on co-creation in curriculum, assessment, and teaching methods. Co-creation will be defined as an activity in which students and educators engage in shared decision-making, working collaboratively to design educational processes or content (1). Studies using related terminology such as co-design or co-production will be included if they align with this definition. Only studies that provide clear descriptions of collaborative processes not just student consultation or

feedback will be considered. Studies that merely seek student input without involving them in joint decision-making will be excluded.

Context

The review will focus on co-creation efforts within the context of medical and higher education institutions. Eligible studies must describe co-creation that takes place during students' formal academic enrolment. Co-creation efforts involving non-academic contexts, such as community health initiatives or patient-provider collaboration in clinical environments, will be excluded. The review will also exclude studies focused solely on postgraduate education or continuing professional development, as these fall outside the scope of the learner-teacher dynamic central to this review.

Early view

PCC ELEMENT	INCLUSION CRITERIA	EXCLUSION CRITERIA
Population	• Studies focussed on co-creation in the context of higher education and medical education.	Studies that don't involve academic stakeholders.
Concept	• Studies with major focus on co-creation between students and teachers. • Shared decision may be called co-creation, co-design or co-production. • Co-creation in curriculum, assessment and pedagogy. • Studies with detailed description of the process of co-creation.	• Studies that don't involve students in decision making. • Studies that don't involve both learner and educator in decision making
Context	• Higher education • Medical education	• Non-academic co-creation studies. • Studies on co-creatin between patient and doctors or doctors and community.
Evidence	• Full text articles. • Commentaries, editorials and dissertations. • Policies from the accrediting bodies	• Conference proceedings, abstracts and posters.

Table 1.1- PCC- Population, Concept and Context

Sources

Both qualitative and quantitative studies will be included in the scoping review. Eligible sources will comprise peer-reviewed journal articles from national and international contexts, as well as dissertations, editorials, discussion papers, commentaries published in peer-reviewed journals, and published grey literature will be considered. However, study protocols, poster presentations, and conference abstracts will be excluded, as they typically lack comprehensive methodological and analytical details required to extract meaningful data relevant to the research question. In addition, unpublished literature, websites, podcasts, and blog posts will also be excluded to ensure the credibility and scholarly rigor of the data sources.

The review will focus on articles published in English over a 10-year period, from June 2014 to June 2024. Only open access articles in English language publications within this timeframe will be included to enhance accessibility and consistency in analysis.

Early view

Search strategy

The proposed scoping review will be conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews (18-21). This methodology was selected because it provides a systematic and rigorous framework for addressing broad research questions and for exploring the state of knowledge on topics relevant to health professions education. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Review (PRISMA-ScR) checklist will guide the reporting of the review (22). In line with JBI guidelines, a three-stage search strategy will be employed: (1) an initial search limited to identify relevant keywords and index terms, (2), a comprehensive search selected databases using refined keywords, and (3) a manual review of relevant reference lists of the included articles to identify additional relevant sources.

The initial search will be conducted in PubMed to identify Medical Subject Headings (MeSH) and test Boolean keyword combinations. Preliminary search terms will include search terms will be ***("co-***

creation" OR "co-design" OR "staff-student partnership") AND ("higher education" OR "medical education") and will be refined iteratively.

The second phase will involve a comprehensive search of four databases: Scopus, Google scholar, PubMed and Science direct. The inclusion of Google Scholar is justified by its broader indexing of grey literature, including dissertations, reports, and institutional publications that may not be accessible through traditional databases. This ensures a more comprehensive capture of diverse and emerging perspectives on curriculum co-creation. However, to maintain quality, only grey literature published in peer-reviewed or formally published sources (e.g., institutional repositories) will be considered. Unpublished sources such as blogs, podcasts, and informal web content will be excluded. The search period will be limited to English-language articles published between June 2014 and June 2024. The third and final phase will involve reviewing the references lists of all included full text articles to identify any additional relevant literature not retrieved in earlier searches.

Early view

Selection of sources

The identified articles will be imported into Microsoft Excel for organization and screening. Duplicate entries will be removed prior to selection. Article screening will be conducted based on predefined inclusion criteria.

A pilot screening phase will be undertaken in which two independent reviewers will assess the titles and abstracts of a subset of the articles. Any discrepancies between reviewers will be resolved through discussion. Following the pilot testing phase, the remaining screening will be conducted in the same manner, and in case of continued disagreement, a third reviewer will be consulted to reach consensus. Articles that do not meet the inclusion criteria will be excluded, and the reason for exclusion will be documented accordingly. The QualSyst appraisal tool will be employed to assess the quality of the included studies (23), allowing for a structured evaluation of both qualitative and quantitative evidence. The selection process will be reported using the Preferred Reporting Items for Systematic

Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) flow diagram (22), which will outline the number of sources screened, included and excluded at each stage of the review process. (**Appendix 1)**.

Extraction of data

The data from the included records will be extracted using the data extraction form. The following information will be collected: title, authors, year of publication, journal, study context, key concepts, study design and reported outcomes (**Appendix 2)**.

To ensure comprehensive and accurate data collection, the data extraction form may be refined iteratively during the review process. If the reviewers identify missing or unclear information during initial piloting, additional data fields may be added to the extraction form to capture all relevant variables necessary for addressing the research question.

Data extraction will be conducted independently by two reviewers to minimize the risk of bias and error. Prior to full data extraction, a pilot phase will be undertaken in which both reviewers will extract data from a sample of five studies. The results will be compared and discussed with the broader review team to confirm consistency, refine the extraction strategy if needed, and ensure alignment on key definitions and coding categories.

Collating, Summarizing and Reporting the Results

The data will be analysed using a thematic approach, facilitated by ATLAS.ti version 23. Thematic analysis is an appropriate method for scoping review, particularly when synthesizing findings from heterogenous sources that include both qualitative and quantitative data. This approach enables researchers to identify, organize and interpret patterns across diverse studies, thereby allowing for a comprehensive mapping of key concepts and recurring components.

Early view

The extracted data will be thematically categorized according to the essential components of co-creation as well as any emergent themes that arise during analysis. This method will support the identification of commonalities, variations ad conceptual relationships across the included studies, in line with the objective of the scoping review.

The results will be presented in both narrative and tabular formats, and the overall reporting will adhere to the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines (23) to ensure transparency, rigor and reproducibility.

CONCLUSION

This scoping review will explore the components of co-creation and will serve as the foundation for developing a structured framework to support its effective implementation. The resulting framework will aim to provide institutions and educators with a clearer understanding of how to meaningfully integrate co-creation practices into curriculum design and pedagogical processes. In order to ensure the integrity of the framework, the review will not only identify the essential elements of co-creation but will also examine how these elements have been implemented across different educational contexts.

Early view

Although scoping reviews do not evaluate outcomes in the way systematic reviews do, this review will incorporate a quality appraisal of included studies using the QualSyst tool. This will help assess the methodological rigor and the level of detail provided regarding implementation. To prevent contamination of findings with poorly executed practices, only studies that offer clear, detailed accounts of active student–educator collaboration will inform the development of the framework. In doing so, the review will aim to ensure that the final recommendations are grounded in well-documented, credible examples of co-creation.

REFRENCES

1. Bovill C, Cook-Sather A, Felten P, Millard L, Moore-Cherry NJHE. Addressing potential challenges in co-creating learning and teaching: Overcoming resistance, navigating institutional norms and ensuring inclusivity in student–staff partnerships. 2016;71(2):195-208.

2. Lubicz-Nawrocka TM. Exploration of how curriculum co-creation advances student and staff aims for Scottish higher education. 2020.

3. Bovill CJHE. Co-creation in learning and teaching: the case for a whole-class approach in higher education. 2020;79(6):1023-37.

4. Lubicz-Nawrocka TJSEiHEJ. Creativity and collaboration: An exploration of empathy, inclusion, and resilience in co-creation of the curriculum. 2019;2(3):199-213.

5. Matthews KE, Cook-Sather A, Healey M. Connecting learning, teaching, and research through student–staff partnerships: Toward universities as egalitarian learning communities. 2018.

6. Blau I, Shamir-Inbal TJIS. Digital technologies for promoting "student voice" and co-creating learning experience in an academic course. 2018;46(2):315-36.

7. Kaur A, Awang-Hashim R, Kaur MJTiHE. Students' experiences of co-creating classroom instruction with faculty-a case study in eastern context. 2019;24(4):461-77.

8. Riddell J, Gadoury-Sansfacon G-P, Stoddard SJIJfSaP. Building institutional capacities for students as partners in the design of COVID classrooms. 2021;5(2):111-22.

9. Owen J, Wasiuk CJIJfSaP. An agile approach to co-creation of the curriculum. 2021;5(2):89-97.

10. Vaughan N, Clampitt K, Park NJT, Inquiry L. To teach is to learn twice: The power of a blended peer mentoring approach. 2016;4(2):64-80.

11. Dollinger M, Lodge J, Coates HJJoMfHE. Co-creation in higher education: Towards a conceptual model. 2018;28(2):210-31.

Early view

12. Temple Clothier A, Matheson DJJoF, Education H. Using co-creation as a pedagogic method for the professional development of students undertaking a BA (Hons) in Education Studies. 2019;43(6):826-38.

13. Felten P, Cook-Sather A, Bovill C. Engaging students as partners in learning and teaching: A guide for faculty: John Wiley & Sons; 2014.

14. Mercer-Mapstone L, Dvorakova SL, Matthews KE, Abbot S, Cheng B, Felten P, et al. A systematic literature review of students as partners in higher education. 2017;1(1).

15. Bergmark U, Westman SJIJfAD. Co-creating curriculum in higher education: Promoting democratic values and a multidimensional view on learning. 2016;21(1):28-40.

16. Abbonizio J, Palermo C, Brand G, Buus N, Fossey E, Dart J. Co-designing formal health professions curriculum in partnership with students: A scoping review. Medical Teacher. 2024:1-12.

17. Aromataris E, Munn Z. JBI manual for evidence synthesis: Jbi; 2020.

18. Hadie SNH. ABC of a Scoping Review: A Simplified JBI Scoping Review Guideline. Education in Medicine Journal. 2024;16(2):185-97.

19. Peters MD, Marnie C, Tricco AC, Pollock D, Munn Z, Alexander L, et al. Updated methodological guidance for the conduct of scoping reviews. JBI evidence synthesis. 2020;18(10):2119-26.

20. Pollock D, Davies EL, Peters MD, Tricco AC, Alexander L, McInerney P, et al. Undertaking a scoping review: A practical guide for nursing and midwifery students, clinicians, researchers, and academics. Journal of advanced nursing. 2021;77(4):2102-13.

21. Hadie SNH, Hassan A, Ismail ZIM, Asari MA, Khan AA, Kasim F, et al. Anatomy education environment measurement inventory: A valid tool to measure the anatomy learning environment. Anatomical sciences education. 2017;10(5):423-32.

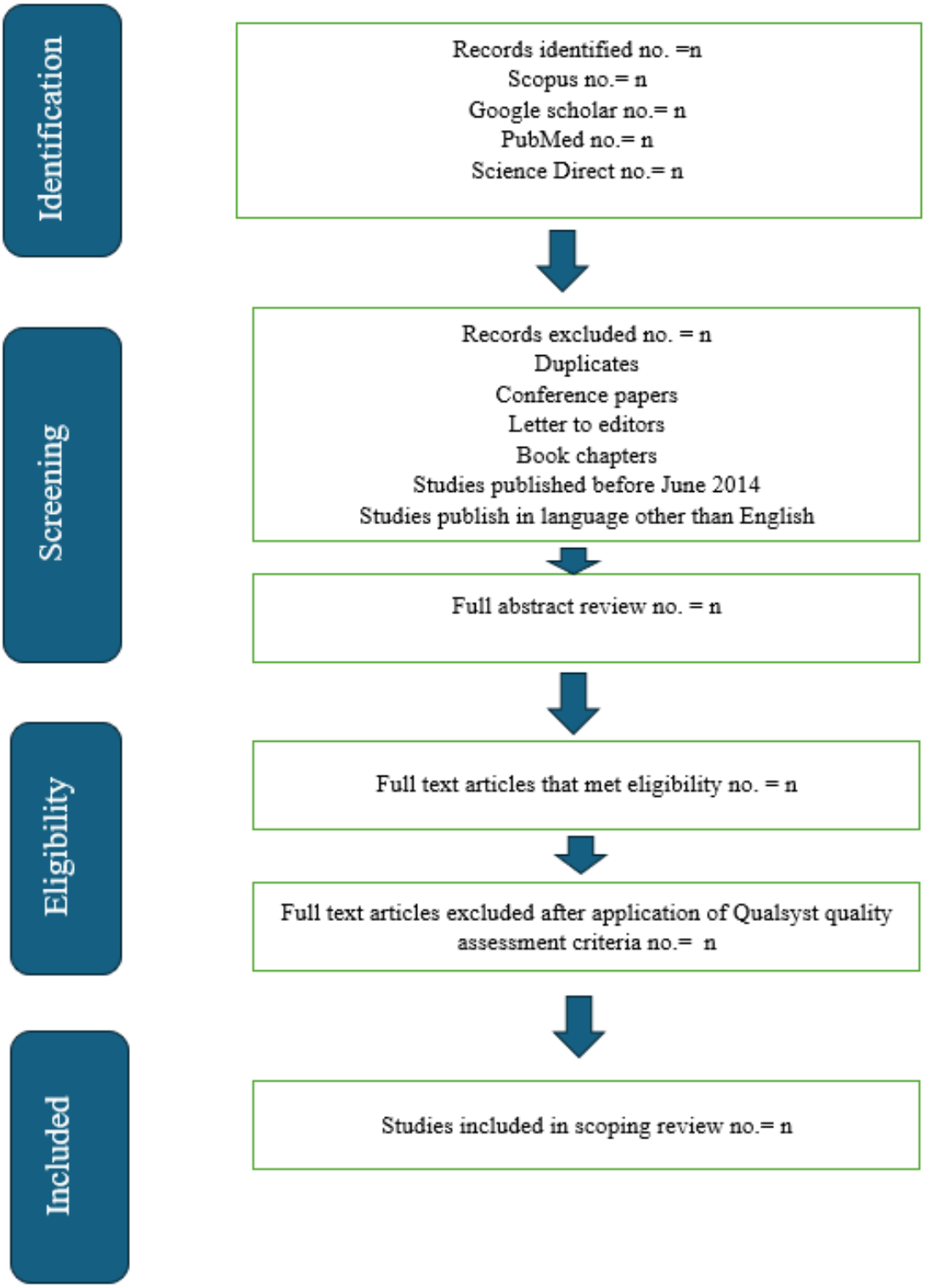
22. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. Annals of internal medicine. 2018;169(7):467-73.

Early view

23. Kmet L. Standard quality assessment criteria for evaluating primary research papers from a variety of fields. Alberta Heritage Foundation for Medical Research Edmonton. 2004.

Early view

Appendix 1


Identification
Records identified no. =n
Scopus no.= n
Google scholar no.= n
PubMed no.= n
Science Direct no.= n
Screening
Records excluded no. = n
Duplicates
Conference papers
Letter to editors
Book chapters
Studies published before June 2014
Studies publish in language other than English
Full abstract review no. = n
Eligibility
Full text articles that met eligibility no. = n
Full text articles excluded after application of Qualsyst quality assessment criteria no.= n
Included
Studies included in scoping review no.= n

Appendix 2

Data extraction form

Title	Authors	Year of publication	Journal	Context	Concept	Study design	Outcome

Early view