Design and development of an arena blended connected learning model for faculty development in health professions education: A step forward

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ABSTRACT

Current medical education and clinical practice has led to a need for advanced faculty development for medical teachers to effectively play the role of educators, researchers and administrators. There is large variability in the teaching programmes across countries, which range from a one-time activity to regularly scheduled workshops and seminars, to a highly advanced course spanning a few months to a year. Several healthcare institutes around the world offer faculty training programmes in health professions education, where the curriculum varies in design as they are developed and implemented by their own institutional body or education unit.

Following a discussion of arena blended connected (ABC) learning design during a faculty training programme (Postgraduate Diploma in Health Professions Education) and the subsequent move towards an online approach to education due to the pandemic in 2019, the advisory faculty and students started to envision designing the already existing Postgraduate Diploma in Health Professions Education curriculum along the ABC model favouring blended and outcome-based education.

Criteria were set for each topic with clearly defined learning levels to be implemented and the frequency of implementation. We describe the design and development of a curriculum for faculty development of health professions education using the ABC model.

Natl Med J India 2024;37:35–8

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[**To cite:** John AS, Nalini YC, Nancy A, Rayapudi JJ, Kattil PK, Krishnamurthy B, *et al*. Design and development of an arena blended connected learning model for faculty development in health professions education: A step forward. *Natl Med J India* 2024;**37:**35–8. DOI: 10.25259/NMJI_441_2022]

INTRODUCTION

The art of teaching in this century is by far more challenging than previously. Be it the ascension of advanced technologies such as artificial intelligence and teaching aids or the emergence of pandemics and natural disasters. Our response to them, as teachers have been at the forefront of change and innovation. The rapid paradigm shift in medical education and clinical practice has led to the need for advanced faculty development to play the role of educators, researchers and administrators. The teaching programmes across the countries range from a one-session programme to regularly scheduled workshops or seminars, to a highly advanced course spanning over a few months to a year.[1,2] Several medical/healthcare universities and institutes offer a 1-year training programme in medical education.[3] From its infancy this profession has relied on the transfer of skills from one generation to the next. During a discussion of arena blended connected (ABC) learning design and the subsequent move toward an online approach to education and training due to the pandemic in 2019, the advisory faculty and students of a postgraduate diploma in health professions education (PGDHPE) envisioned an ABC design favouring a curriculum with blended and outcome-based education.[4]

The goal was to set criteria for each topic with well-defined learning levels for learners to achieve. The candidates of the 2019–20 batch of PGDHPE initiated the project, working collaboratively, with ample mentoring from the faculty. Following numerous rounds of discussions and editions, and with its approval by the Institutional Board of Studies, the revamped curriculum was rolled out for the 'Fellowship in Health Professions Education' (FHPE) course for the batch of 2020–21. The outcome analysis and student feedback analysis will be done both at the interim level and end of the course to better validate and modify the 'ABC model linked faculty development course'. Here, we describe the design and development of the curriculum of a 1-year course on health professions education using the ABC model.

POSTGRADUATE DIPLOMA IN HEALTH PROFESSIONS EDUCATION

Faculty development is important in three main aspects: personal development, professional development, and instructional and course development.[5] The existing curriculum of PGDHPE at our institution is a 1-year course consisting of 4 core modules and 3 elective modules. This course is designed as a choice-based credit system as per the recommendations of the University Grants Commission (UGC). The courses chosen for the programme also reflect a gradual movement. The PGDHPE comprises 4 core courses covering 4 major areas of education. Mini-projects and portfolios are also part of the credit system. The unique features of PGDHPE are heutagogy-inspired, credit-

based, project-linked, portfolio-driven, mentoring supported and self-directed learning.

ARENA BLENDED CONNECTED DESIGN OF LEARNING[4]

The ABC curriculum design is a learning design created by Drs Clive Young and Natasa Perovoc, University College of London in 2016. It is an effective method to create a visual 'story board' of the type and level of learning activities (both offline and online) required to meet the course outcomes. ABC design is useful when changing a course to online or a blended format.

Steps of curriculum preparation using ABC learning design

A modified Delphi approach was used for preparation of the blended curriculum. Literature search and review was done by the PGDHPE candidates and relevant questions were prepared and discussed with the mentors in several rounds.[6] With each round of discussion, each component of the ABC design was prepared followed by a final matrix that was submitted to the Institutional Board of Studies and approval obtained after scrutiny (Fig. 1).

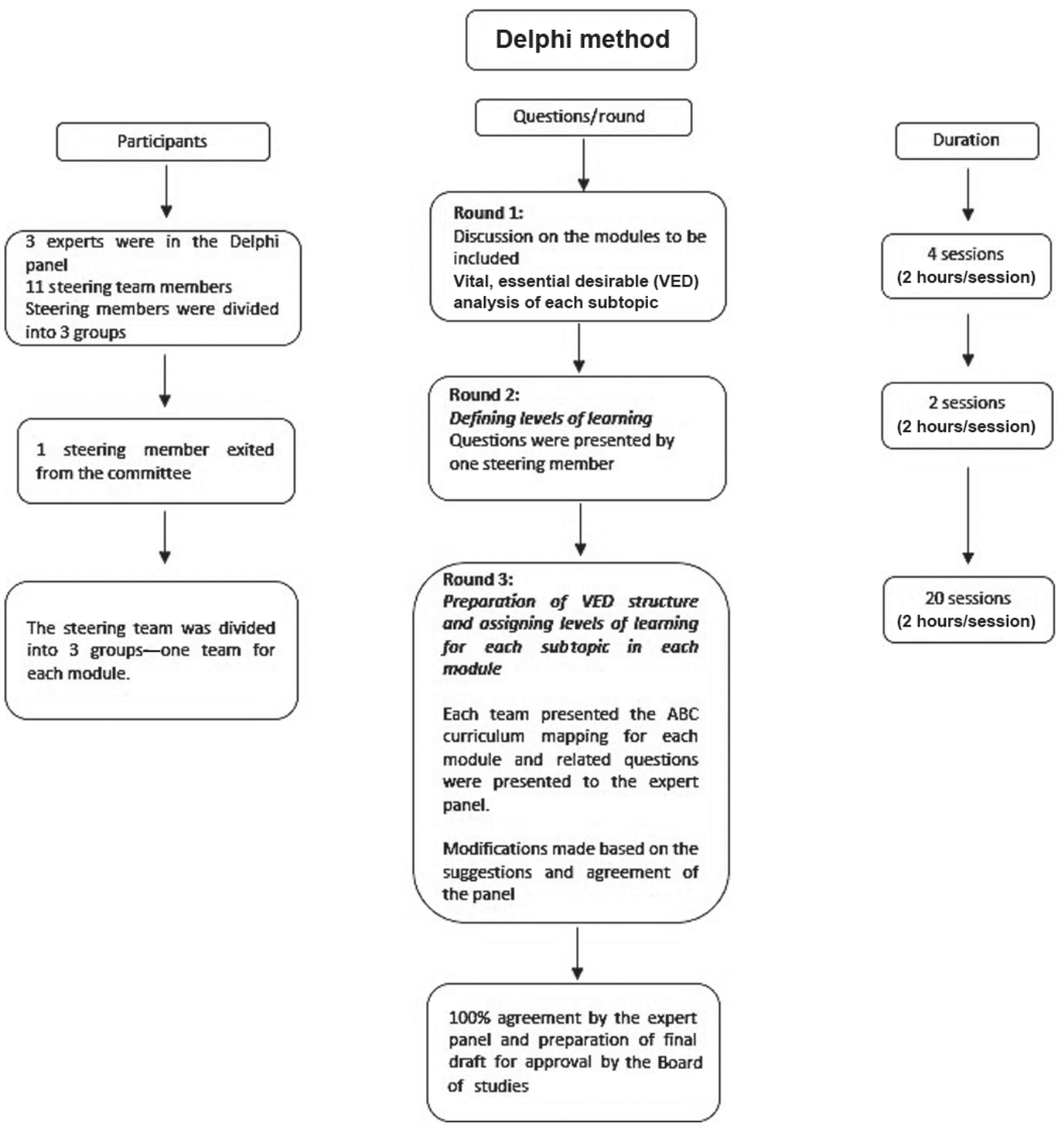

FIG 1. Modified Delphi approach

Levels of learning

1. *Modified operative definitions (adapted from ABC Design):*
   a. *Acquisition*. Obtaining knowledge from various educational resources (via books, lectures, audio podcast, videos, webinars, seminars, CME programmes, conferences and direct observation). It is assessed by response to questioning during the session or is indirectly assessed by participation in other activities.
   b. *Discussion.* Engage in questioning and challenging the ideas/concepts of teacher and peers to create new ideas/ concepts or refine/reinforce pre-existing ideas/concepts.
   c. *Investigation.* Involves 3 Cs (compare, contrast and critique) on existing educational resources, which reflects the knowledge acquired by doing projects using educational resources.
   d. *Collaboration.* Involves exchange of ideas during small group discussion to produce a working model for implementing in day-to-day life.
   e. *Practice.* Applying the knowledge/skill/attitude gained by the above teaching–learning methods (1–4) in day-to-day teaching activities (classroom), documenting them by maintaining an e-portfolio and further improving the result of their actions based on the evidence of feedback collected.
   f. *Production*. Demonstrable scholarly activities based on the above definitions, resulting in products such as scientific papers, presentation at conferences, writing monographs or peer-reviewing articles.
2. *VED (vital, essential, desirable) analysis of the topics/ modules in the curriculum:* The topics and subtopics in each module were analysed and categorized into vital, essential and desirable. And based on the VED analysis, the levels of learning for each topic were decided.
3. *Rubrics for application of level of learning:* The rubrics were prepared to identify the frequency of each level of learning to be incorporated into topics/subtopics in various modules. The higher the frequency, the more often a particular learning activity is used for training the topic (Table I).
4. *Preparation of complete learning activity matrix-based on the topics in each module:* The VED analysis of topic, level of learning, frequency of activity were all aligned to each topic in all 7 modules. The final matrix of ABC design for the PGDHPE was created (Annexures 1–4 available at *www.nmji.in*).

Module 1: Teaching and learning methods

It consists of topics pertaining to teaching–learning methods that are of paramount importance to medical teachers. Most of the topics under module 1 are classified as vital barring a few exceptions such as psychological theories of learning, which are classified as essential as these topics help us to give insights, over learning styles and receptivity of a learner, which in turn helps a teacher to learn and teach better. New tools such as Google forms and survey monkeys are useful in teaching and research. Awareness about these new tools which can be used to collect student feedback or perceptions will help us in managing the work load effectively.[7,8] Comparison of the undergraduate and postgraduate programmes across the world is classified as desirable as it is useful to be aware of the roles and responsibilities of a clinician and medical teacher across the globe.

TABLE I. Rubric for application of level of learning

1	Seldom
2	About the half of time
3	Most of the time
4	Always

Hierarchy of learning in module 1

Levels of learning such as acquisition, discussion are necessary for a learner in all, most of the topics listed under the teaching and learning module and frequency scale is 4 (that is always) or 3 (most of the time). Components of learning such as investigation and collaboration do have a place in teaching and learning modules, especially in topics such as problem-based learning, but the frequency of usage is 3 or 2 as it requires more infrastructure in terms of time, place and faculty. Knowledge learnt on topics such as large group and small group teaching methods, microteaching, specific learning objectives and outcomes have high applicability in terms of practice and production for a teacher as they incorporate the new techniques in their regular teaching and thus, on the frequency scale, it is rated as 4 or 3.

Module 2: Assessment

Assessment is an integral part of educational activities. Student assessment is an indirect measure of programme outcome.[9] The module on assessment consists of topics pertaining to principles and core concepts of student assessment. Various tools of assessment specifically applicable to medical education assessment were given special attention. Newer tools for workplace-based assessment (WPBA), which is an important assessment strategy, are given higher weightage.[10]

Hierarchy of learning in module 2

Most of the topics under the assessment module fall under the vital and essential category. Principles of evaluation, tools of assessment, WPBA, projects, post-validation are vital skills for an educator/medical teacher. Tools of assessment is best learnt by practice and production. Hence, they were scored 4, respectively, as per the rubrics of the level of learning. Mechanics of question paper setting—blue printing, item banking, etc. were also given high scores in acquisition and production. Topics such as standard setting and normalization came under the 'desirable' category with high scores in acquisition and collaboration. Professionalism skills which are vital for a healthcare professional (soft skills training and assessment) were termed as a vital topic and high scores in acquisition, collaboration and practice.

Module 3: Curriculum and education management

This module trains candidates to design a curriculum by using different available models and to understand the principles behind it, so that mapping a curriculum for different courses will be easy. The entire content of the curriculum module is divided into eight topics and subdivided into many subtopics for each. Among this, curriculum development, quality control, management in education and professionalism, mentoring and feedback are considered vital because they are the key elements in designing and refining the curriculum. Criticizing and analysing an existing curriculum by different regulatory bodies, knowing the future of the curriculum and understanding the universities' structure and administration are labelled as essential because knowledge about that is value added to the

module. The various determinants of curriculum are marked as desirable because it is useful to know the various influencers of health professionals education in India.

Hierarchy of learning in module 3

According to the levels of learning, discussion, investigation and practice are given more weightage: 3 (most of the time) and 4 (always) in curriculum development. Discussion is given 4 (always) in criticizing and analysing the existing curriculum. Levels of learning such as practice and production are given 3 and 4 in management of education, professionalism, mentoring and feedback, and also in the administration of universities. Before planning to design a curriculum, one should know to investigate (i.e. situational analysis) the various internal and external factors and it was given the rubric of 4.

Modules 4, 5 and 6: Educational research, Simulation-based learning and student wellness

Educational research is the application of scientific and disciplined inquiry to the study of problems related to education.[11] The module of educational research offered as an open elective in the PGDHPE curriculum introduces the learner to various facets pertaining to research. These include types of research: mixed-methods research; difference between educational research and other types of research; identifying a research problem; reviewing the literature; advancing direction through research questions and statements; and collecting, analysing and interpreting the data. This process culminates in a research report presented, evaluated, and published and possibly used by the medical fraternity.

In the curriculum of PGDHPE, simulation pedagogy is an open elective module conducted for a period of 4 weeks. It is further subdivided into four subtopics. The initial lessons dealing with the why and how of simulation is considered vital for the learner to recognize as it would help appreciate the need for using simulation in medical education.

Student wellness is one of the elective modules in the PGDHPE curriculum, which includes mentorship guidance and counselling skills for teachers. Student well-being is vital for a good learner and the learning environment.[12] This module emphasizes the importance of teachers being mentors, guides and supporting the well-being of their students.

CONCLUSION

Reforms and revolution in health professions education should begin and progress with simultaneous development of educators. Faculty development is the vital step to move in a progressive direction. To create educators, leaders and advance in educational scholarship, an in-depth knowledge of the principles of education should be provided by a more structured course. A curriculum incorporating various levels of learning for a blended health professions education is a novel and innovative approach which can make learning more impactful and reach a larger group of aspiring teachers. We have shared our experience of designing and developing an ABC model for an already existing PGDHPE to enhance the learning experience and reach a wider audience.

ACKNOWLEDGEMENT

We would like to acknowledge Dr Jyothi, our fellow candidate, who first introduced the concept of ABC design, which inspired us to create the new curriculum.

Conflicts of interest. None declared

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