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Faculty Development Program in Medical Education: An Experience from the College of Medicine, Najran University, Saudi Arabia

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ABSTRACT

Background: *A Faculty Development Program (FDP) is one of the major strategies that is reported in the reviewed literature to counter the increasing challenges in undergraduate medical education in Saudi Arabia. Successful implementation of FDP and workshops has been linked to enhanced teaching performance, development of new teaching skills, suggested assessment techniques, improved course design, and increased adherence to educational perspectives.* ***Methods:*** *A 5-week workshop as an FDP was planned and the participants' feedback was assessed at the end of the program. This report is aimed to highlight the experience and the course design that was delivered during the workshop.* ***Results:*** *There were 43 healthcare providers, 23 were males and 20 were females. There were 15 physicians 20 nurses, and 8 participants from other specialties. Regarding the participants' teaching experience, most of the participants (27, 62.8%) have been involved in teaching for more than 10 years and 27 participants (62.8%) answered yes when they were asked if this workshop is their first session in medical education. Analyzing the responses of the participants by the end of the workshop, 81.4% of the participants strongly agreed that they have been introduced to new concepts and approaches in medical education. Also, 55.8% of participants strongly agreed that the workshop changed their background in designing learning/teaching and assessment. Most of the participants (51.2%) strongly agreed that the workshop changed their background regarding the writing learning outcomes, and 79.1% of the participant strongly agreed on their enthusiasm to join more training in medical education.* ***Conclusions:*** *Competent clinicians and scientists are not naturally good teachers and it is highly recommended to establish and run a well-designed FDP throughout the educational year. The experience of the lecturers or their academic levels is independent of their need for courses and workshops in the field of medical education.*

Keywords: Faculty Development Program (FDP)

INTRODUCTION

In Saudi Arabia, undergraduate medical education has passed through different phases and the number of medical schools has increased from 5 to more than 30 medical colleges [1]. This huge expansion in the number of medical and health sciences schools may affect the quality of medical education due to different challenges among which providing the newly established schools with adequate and qualified medical teachers. A Faculty Development Program (FDP) is one of the major strategies that is reported in the reviewed literature to counter such increasing challenges in undergraduate medical education in Saudi Arabia [2-4]. It has been recommended to establish and run a well-designed FDP throughout the educational year [5]. The topics which are highlighted for inclusion in FDP aimed to develop teaching skills include course design, outcome based-education, constructing assessments and rubric design, grading strategies, student motivation, learning disabilities, active learning, communication skills, reflection, and searching and evaluating evidence [6].

Successful implementation of FDP and workshops has been linked to enhanced teaching performance, development of new teaching skills, suggested assessment techniques, improved course design, and increased adherence to educational perspectives [4,7,8]. In agreement with what has been reported regarding the expected outcomes of FDP, it was reported that different development courses have an impact on enhancing the faculty members' teaching skills and choosing the appropriate assessment method [9,10].

In the current report, a workshop as an FDP was planned and the participants' feedback was assessed. In addition to that, this report is aimed to highlight the experience and the course design that was delivered during five weeks as an FDP.

METHODS

This study has two parts, the course design and the assessment of participants' feedback at the end of the course. A well-designed questionnaire was used to collect the demographics and feedback of the participants using a Likert scale.

The Workshop/Course Design

Course design is considered one of twelve roles played by teachers, and is defined as the creation of a connected series of structured experiences intended to achieve learning. In the age of outcome-based education, a significant part of reviewed literature shows rapid growth in studies concerning approaches, strategies, and techniques for enhancing teaching, learning, and assessment [11,12]. Among those approaches is constructive alignment, which is a pedagogical approach that relates to the constructivist theory of learning and emphasizes the alignment between the intended learning outcomes, teaching and learning activities, and assessment tasks [13]. It is believed that constructive alignment encourages students to engage in deep learning, discourages students' surface learning, and reflects the shift of the paradigm from classical teacher-centered teaching to a student-centered one [13].

The design of the workshop was as a part of the FDP which targets primarily the medical lecturers at Najran University. The workshop was held part-time for five weeks (during October and November 2021) and was a blended course with both face-to-face activities and online activities. Intended learning outcomes are "statements indicating the level of understanding and performance the students are expected to achieve as a result of engaging in the teaching and learning experience'' [13]. The intended learning outcomes for the workshop were as follows

By the end of the course/workshop, the participants should be able to-

- Describe pedagogical encounters in their context, and explain outcome-based education and the constructive alignment approach with the integration of the concept, meaningful learning, deep/surface learning, and reflection and reflective learning.
- Apply the constructive alignment approach in a pedagogical encounter from their context, and design or redesign course-intended learning outcomes, the teaching, and learning activities to achieve these outcomes, and the consistent assessment.
- Apply the concept of scholarship in medical education to propose strategies for change/development of teaching and learning in their context.

Several issues should be taken into account to design intended learning outcomes including the type of knowledge, content, and the target level of understanding. The first intended learning outcome, describe and explain, belongs to declarative knowledge at the levels of descriptive and integrative understanding according to Biggs Solo Taxonomy. The second and third intended learning outcomes, apply, are classified under functional knowledge related to integrative and extended understanding. However, the third intended learning outcome might also be considered as being at the definite extended understanding level, since it goes beyond what has been taught and needs creative application [13].

Teaching/learning activities are activities occurring within a teaching/learning situation during which the teacher and the learners encounter learning. There are three types of teaching/learning activities: teacher-controlled, peer-controlled, and self-controlled [14]. During the workshop, the teaching/learning activities were as follows

- The classical teacher-centered approach such as lectures they are a gold standard particularly to introduce declarative knowledge, orient the learners about the course contents and regulations, and open the entry points

[15]. However, modified lectures such as interactive lectures were used rather than classical lectures, to avoid undesirable passive learning [16].

The teaching was also based on problem-oriented and collaborative approaches to involve the participants in the learning process as active learners [17]. Different active learning strategies were held during the face-to-face and online sessions as follows-

- Small group discussion and group work: These are mainly peer-controlled activities that help to achieve meaningful learning through physical or online-mediated interactions between the learners [18].
- Peer learning: as peer-controlled activities during the small group discussion, group work, or as a learning partner. Well-implemented peer learning has significant effects on different levels socially, at the level of communication skills, and psychologically in the form of boosted self-esteem, motivation, and confidence [19,20].
- Feedback and reflection: feedback from teachers and peers is another peer-controlled activity that is considered an important learning source. Reflection allows the participants to reflect on both their progress and that of their peers as well. Feedback is a highly important consideration in the adult learning context such as FDP rather than exams and evaluations. Therefore, during the workshop, the participants were introduced to different feedback models such as the seven-principle feedback model, which is considered an assessment and learning tool, that supports learners to develop into self-regulated and lifelong learners [21].
- Self-study strategy through listening, reading, writing, and reflecting [22].

During the course there were three modules as the following

Concepts and Tools in Medical Education

During this module, the participants were asked to study literature to describe different concepts and relate them to their context and to what is introduced during the course. These concepts include outcome-based education, the constructive alignment approach, integration, meaningful learning, deep/surface learning, and reflection and reflective learning. The learning activities in this module include-

Learning activity 1: Participants were asked to describe a pedagogical encounter from their context regarding its actors, activities, and content using didactic questions.

Learning activity 2A: Through the study of literature and/or suggested information resources, participants were asked to describe and explain the following concepts: outcome-based education and the constructive alignment approach concerning integration, meaningful learning, and deep/surface learning.

Learning activity 2B: Using a feedback ladder (Table 1), each participant has given feedback to a peer. Regarding the contents, the workshop included three modules that were designed and aligned to achieve the intended learning outcomes. The three modules will be as follows.

Table 1 Ladder of feedback: This was developed by David Perkins and Daniel Gray Wilson at the Harvard Graduate School of Education's Project Zero

Feedback aspect	Explanation
Clarify	Are there aspects that you do not understand, and ensure that you are clear about what your peer intends to do?
Value	What do you find to be impressive, innovative, and strong?
Concerns	Potential problems or challenges? Share your concerns.
Suggest	Do you have suggestions to help your peer to improve?

Learning activity 3: Participants were asked to write a plan of reflection and reflective learning to be used during the course.

Course Design and Design of Assessment

This module focuses mainly on the application of outcome-based education and design principles from the teacher's perspective. The learning activities for this module include

Learning activity 4: Based on the theoretical background in learning activities 1 and 2, the participant were asked to design or redesign a course from their context by applying the constructive alignment approach. The report should be about 2000 words to 3000 words and should include the following sections: introduction, context of practice, description of the encounter, the course design description, intended learning outcomes, teaching/learning activities, assessment, discussion, and references.

Learning activity 5: Based on the assessment criteria (Table 2), each participant was asked to assess and write feedback to learning activity 4 created by two of his/her peers.

Table 2 Assessment criteria for grading, course design/redesign using the constructive alignment approach

Aspect	Fail	Pass	Pass with distinction
Description of the problem and context of practice	No clear description	The problem and the context are described and discussed from different perspectives	
Clarity of the aim	The aim is not described clearly	The aim is clearly described and it is related to the course and assessment design	
Course design description	Failure to apply the basic principle of outcome-based education	The course design is presented in such a manner that adheres to the principles of outcome-based education	The paper reasons about the design concerning discipline-specific literature
Course design Alignment	Failure to design aligned teaching and learning activities to achieve the intended outcomes and failure to choose the appropriate assessment	The course design is built upon constructive alignment principles by setting up intended learning outcomes, the teaching, and learning activities to achieve these outcomes, and the consistent assessment	The paper demonstrates an understanding of how design and assessment are interrelated and shows the ability to reason how the choice of course design can facilitate meaningful and deep learning

Scholarly Approach to Create Change/Development of Teaching and Learning

During the previous modules, participants analyzed pedagogical encounters from their context of practice. During this module, the participants went beyond the identification of problems and encounters toward planning, implementing, and evaluating relevant change or development using the scholarship model. Each participant had to choose a learning partner throughout this module.

Learning activity 6A: The participants were asked to prepare an application for a scholarship project applying the different processes of the scholarship model. The report should be about 2500 words to 3000 words and articulate the following: introduction by writing a vivid example of the encounter that was found to be problematic, the participant's context of practice, the aim of the project, an exploration of existing knowledge, methodology, communication of the results, discussion and references.

Learning activity 6B: Based on the assessment criteria (Table 3), each participant was asked to assess and write feedback to a learning partner.

Table 3 Assessment criteria for grading, application for a scholarship project applying the different processes of the scholarship model

Aspect	Fail	Pass	Pass with distinction
Description of the problem and context of practice	No clear description	The problem and the context are described and discussed from different perspectives	
Clarity of the project aim	The aim is not described clearly or not related to medical education	The aim is clearly described and it is related to medical education	

Exploring existing knowledge	Failure to show the minimum relevance of the reference list to the problematized issue	A relevant reference list to the problem and the search is logically described in terms of how it was carried out and how relevant sources were identified and included	The project is well anchored in theoretical background and there are integrated ideas that enable the reader to fully understand and match both the theoretical perspectives and the research questions which underlie the project
Methodology	No logical suggestions for methodology	Methodology and data collection procedures are logically suggested	
Communication of the future project outcome	Not included or not suggested	Suggestions for how the outcome will be communicated and shared at different levels	
Understanding of scholarship of medical education	Fail to show a basic understanding of the scholarship model	The project application shows an overall understanding of the nature of a scholarship model	The project application reflects an outstanding level of cohesion and relevance between different parts and processes in the scholarship model

Regarding the assessment tasks, they were aligned with the intended learning outcomes and the learning activities as explained in Table 1. As a principle, assessment tasks should be aligned with the course intended learning outcomes with consideration of important criteria for assessment tasks including reliability, validity, and relevance. Assessment tasks have two purposes: assessment for learning which is known as formative assessment and assessment of learning which is called summative assessment [13]. Both kinds of assessment tasks are to clarify if learning is carried out or not, as well as to emphasize what students need to learn [14]. The summative assessment is the right assessment type when achievement has to be reported, and its models include the classical measurement model which is known as a norm-referenced assessment, and the standard model criterion-referenced assessment. Norm-referenced assessment is to compare the students to each other through scores, while criterion-referenced assessment assesses students' performance against pre-set criteria. Compared to norm-referenced assessment, criterion-referenced assessment is considered both assessment for learning as well as an assessment of learning [13,23,24].

Table 4 Assessment tasks

Intended learning outcomes	Module	Activity	Location	Assignment	Assessment	Type
1	Concepts and tools in medical education	Interactive lecture	Face-to-face session	Learning activity 1 and learning activity 2A	General verbal feedback from the teachers	Formative assessment
		Small group discussion and peer learning	Face-to-face session and discussion forum in Blackboard	Learning activity 1 and learning activities 2A & 2B	Feedback from peers	Formative assessment
		Self-study	Not specified	Learning activity 3	Feedback from teacher	Formative assessment
2	Module 2: Course design and design of assessment	Interactive lecture	Webinar	No Assignment	None	None
		Self-study, small group discussion, and learning	Discussion forum in Blackboard	Learning activity 4	Individual assignment	Summative assessment (Table 2)
			Discussion forum in Blackboard	Learning activity 5	Feedback from peer	peer followed by teacher assessment formative assessment

3	Module 3: a scholarly approach to create change/development of teaching and learning	Self-study, small group discussion, and learning partner	Discussion forum in Blackboard	Learning activity 6A	Individual assignment	Summative assessment (Table 3) peer following by teacher assessment
			Discussion forum in Blackboard	Learning activity 6B	Feedback from peer	Formative assessment

During the workshop as shown in Table 4, two summative assessments were used along with formative feedback throughout the whole course. The summative assessments were as criterion-referenced assessments according to the assessment criteria in Tables 2 and 3 for learning activities 4 and 6A, respectively. The first summative assessment was designed to assess learning activity 4, which is to design/redesign a course from the participants' context, applying the constructive alignment approach. The second summative assessment was to assess learning activity 6A through which the participants prepare an application for a scholarship project applying the different processes of the scholarship model. Both of the summative assessments were for the assessment of learning. On the other hand, the formative assessments are included as feedback from peers, learning partners, and/or teachers throughout the whole workshop. The formative assessments were employed here as an assessment for learning and as an active learning tool [22].

Finally, there was no final examination but to pass the course, each participant must-

- Pass both of the summative assessments, according to the assessment criteria and grading referred to in Tables 2 and 3.
- Write a reflective paper on his learning experience at the end of the course, using the model he or she has chosen.
- Complete all the learning activities and tasks.

Demographics and Feedback of the Participants

Recruitment and data collection and analysis: There was an announcement about the workshop by the professional development department and the department of medical education at Najran University and the University Hospital. The registration was available online for two weeks and allowed for the college staff and healthcare providers who belong to the college of medicine, other health sciences colleges, or the University Hospital. By the end of the workshop, there were 43 participants have been asked to give feedback regarding the workshop. A well-designed questionnaire was used to collect the demographics and feedback of the participants using a Likert scale. The data were analyzed using the Prism Graph Pad 6 for Windows, version 6.07 (CA, USA). The categorical data were analyzed employing descriptive data and percentages.

Ethics approval

This study was approved by a local committee at the College of Medicine.

RESULTS

Registration and Demographics

There were 43 healthcare providers registered for the workshop that lasted for 5 weeks during October and November 2021. Of the participants (Table 5), 23 were males and 20 were females. There were 6 lecturers (14%), 23 assistant professors (53.5%), and 14 (32.6%) associated professors. By specialty, there were 15 (34.9%) physicians 20 nurses (46.5%), and 8 (18.6%) participants from other specialties.

Regarding the participants' teaching experience, most of the participants (27, 62.8%) have been involved in teaching for more than 10 years; 8 participants (18.6%) for 8 years to 10 years; 6 (14%) participants for 4 years to 7 years; and only two participants have an experience that equal or less than 3 years. Finally, 27 participants (62.8%) answered yes when they were asked if this workshop is their first session in medical education, and 16 (37.2%) only had prior training/workshops in medical education.

Table 5 Participants' demographics

	No. of participants	%
Academic position		
Lecturer	6	14%
Assistant professor	23	53.5%
Associated professor	14	32.6%
Specialty		
Physician	15	34.9%
Nurse	20	46.5%
Other	8	18.6%
Teaching experience		
1 year to 3 years	2	4.7%
4 years to 7 years	6	14%
8 years to 10 years	8	18.6%
More than 10 years	27	62.8%
This workshop is the first in medical education		
Yes	27	62.8%
No	16	37.2%

Quantitative Data

Analyzing the responses of the participants by the end of the workshop, 35 participants (81.4%) strongly agreed and 8 (18.6%) of them agreed that they have been introduced to new concepts and approaches in medical education. Also, 24 participants (55.8%) strongly agreed and 19 (44.2%) agreed that the workshop changed their background regarding the way of designing learning/teaching. Regarding if the workshop changed the participants' background regarding the way of designing assessment, 28 (65.1%) strongly agreed and 15 (34.9%) agreed.

Most of the participants (22, 51.2%) strongly agreed that the workshop changed their background regarding the way of writing learning outcomes. Additionally, 20 (46.5 %) participants agreed on that while one of them was neutral.

When the participants were asked if the workshop changed their way of evaluating and developing learning/teaching, 22 (51.2%) participants agreed and 21 (48.8%) of them strongly agreed. In response to the question, if there were in need to join this workshop, 26 (60.5%) participants strongly agreed and 17 (39.5%) agreed. A significant part of the participants (40, 93%) strongly agreed to recommend this workshop to other colleagues. Finally, 34 (79.1%) of the participant strongly agreed and 9 (20.9%) of them agreed on their enthusiasm to join more training/workshops in the field of medical education.

DISCUSSION

The workshop was an FDP applying two approaches, scholarship of medical education and constructive alignment, to teach applying these approaches. The approach of the scholarship model was developed at the Unit of Medical Education, Karolinska Institute [25]. This approach was primarily designed for the development of teachers' learning and concerns the transfer of the roles of healthcare providers to the role of teachers via an expansion of their awareness of the concept of development in education [25]. The workshop aimed mainly to provide the scholarship model as a learning and investigative tool for medical teachers at Najran University, to help them to improve their teaching effectiveness and to expand the investigation of different educational issues. The second approach that was introduced as a learning tool during the workshop is the application of constructive alignment. The constructive alignment approach is known to enhance teaching effectiveness and support meaningful learning, whilst lack of alignment is a major limiting factor to achieving meaningful deep learning, thus, learners instead adopt a surface approach to learning [14]. The two concepts of meaningful deep learning and surface learning are derived from cognitive

orientation [26]. Meaningful learning enables the learner to interpret and integrate newly introduced subjects to the existing knowledge, and construct new understanding which could be applied in different contexts to achieve certain missions successfully. Conversely, surface learning describes the learners' ability to recall relevant knowledge from long-term memory [27-29].

During the workshop, the learning activities/contents and assessments were aligned with the intended learning outcomes. Also, different formal pedagogical strategies which have been reported to foster meaningful learning were involved in the learning activities. For instance, instead of performing classical lectures during the face-to-face sessions to convey declarative knowledge, an interactive lecture style was employed. The style of an interactive lecture has been shown to promote important aspects of meaningful learning, including pre-understanding, relevant context, and active learning [16]. Other examples of formal pedagogical strategies incorporated in the current course design were group discussion, peer learning, self-study, feedback, and reflection. All of these different strategies are classified under collaborative, problem-solving, and motivational learning styles, which are known to boost active learning and meaningful learning [17,22,30,31]. Indeed, active learning per se through the involvement of the learners in the learning process is highly significant in the context of adult learning and was an important principle during the construction of the learning activities of the workshop.

Along with the two approaches that were introduced during the workshop, important and related concepts to these approaches and the field of undergraduate medical education were studied. These concepts include integration, reflection, and reflective learning. When it comes to the concepts of reflection and reflective learning, reflection has been described and explained in different ways, and it has been considered a key concept in teacher education and as a learning tool [32]. Although there is a lack of a single structured definition for reflection, Boyd and Fales and Boud et al. have suggested two definitions that share some commonalities. Boyd and Fales suggest that "reflective learning is the process of internally examining and exploring an issue of concern, triggered by an experience, which creates and clarifies meaning in terms of self, and which results in a changed conceptual perspective" [33,34]. The other definition by Boud et al. considers reflection in the context of learning as "a generic term for those intellectual and affective activities in which individuals engage to explore their experiences to lead to new understandings and appreciation". During the workshop, the participant was encouraged to choose a reflection model, such as Gibbs' cycle, to reflect on their learning process during the course, and to write a reflective paper as one requirement to pass the course. The idea behind this is to involve the participants in the process of reflection which may increase their appreciation of the valuable role of reflection in learning.

By the end of the workshop, there were 43 participants have been asked to give feedback regarding the workshop, and a well-designed questionnaire was used to collect the demographics and feedback of the participants using a Likert scale. Although most of the participants (27, 62.8%) have been involved in teaching for more than 10 years, more than 62% of the participants reported that this workshop was their first session in the field of medical education. This may be owed to the predominant view that competent clinicians and scientists are naturally good teachers [35,36]. However, it is now acknowledged that the preparation of medical teachers for teaching is essential. This is to overcome teaching weaknesses that may emerge with the lack of educational and pedagogical skills, in particular at the level of undergraduate medical education. In addition, medical teachers are faced with reasonable increasing demands to be effective professionals, aware investigators, and productive clinicians and scientists. Therefore, to help medical teachers accomplish their multiple roles, they need to be involved in some sort of faculty development program [37,38]. The last point is supported by the participants' feedback since 81.4% of participants were strongly agree and 18.6% of them agreed that they have been introduced to new concepts and approaches in medical education (Figure 1). Also, 55.8% of the participants (55.8%) strongly agreed and 44.2% agreed that the workshop changed their background regarding the way of designing learning/teaching and assessment. Therefore, the importance of and motivation for the FDP are highly appreciated to improve the lecturers' skills and knowledge regarding education within the context of medicine and other health sciences [39]. In the current report and consistent with the last observation, a significant part of the participants (40, 93%) strongly agreed to recommend this workshop to other colleagues and 79.1% of them strongly agreed on their enthusiasm to join more training/workshops in the field of medical education. Finally, an important aspect of constructive alignment is the writing of learning outcomes [14]. In the current study, most of the participants (22, 51.2%) strongly agreed that the workshop changed their background regarding the way of writing learning outcomes.

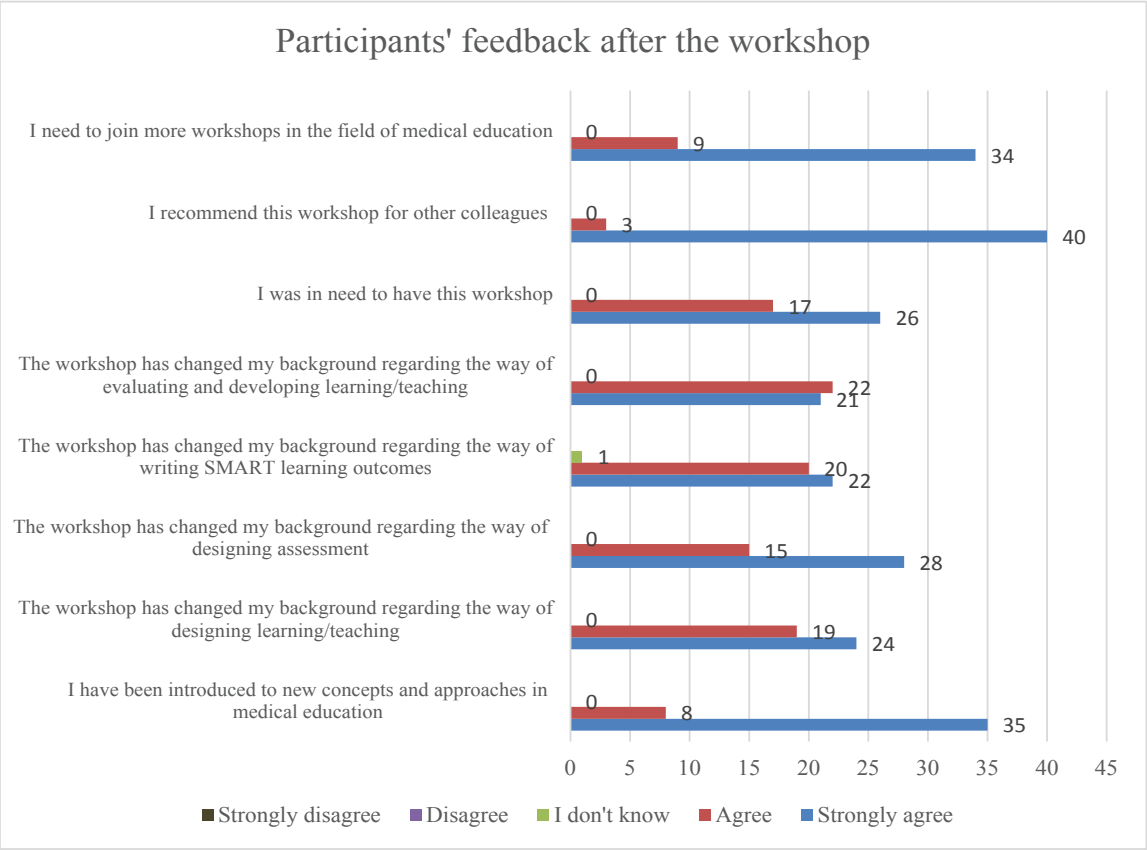

Figure 1 Participants' feedback after the workshop

CONCLUSION

In higher education, Harden and Crosby have defined the good teacher as more than just a classical lecturer, but instead as someone who plays the role of an information provider, role model, facilitator, assessor, planner, and resource developer. Good teaching chooses and fosters the appropriate teaching and learning activities to facilitate student learning and helps to achieve the intended learning outcomes. Additionally, competent clinicians and scientists are not naturally good teachers and it is highly recommended to establish and run a well-designed FDP throughout the educational year. The topics which are highlighted for inclusion in FDP aimed to develop teaching skills include course design, outcome based-education, constructing assessments and rubric design, grading strategies, student motivation, learning disabilities, active learning, communication skills, reflection, and searching and evaluating issues. Finally, the experience of the lecturers or their academic levels is independent of their need for courses and workshops in the field of medical education.

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DECLARATIONS

Conflict of Interest

The author's declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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