

## **A Qualitative Study of Online Learning in a Faculty Development Program on Module Development**

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### **Abstract**

**Background:** Online learning opportunities offered for medical educators were supported by learning principles in medical education. In these distance learning programs various topics of importance are discussed in such a way that that they can bring about the changes to improve the quality of education needed to provide competent health care workers. The objective of the study is to do content analysis of the online discussions and identify key concepts and to evaluate the collaborative learning and understanding of the participants.

**Materials and Methods:** The study was conducted among the thirty two participants of web discussions conducted as a part faculty development program. The objective of the study is to do content analysis of the online discussions and identify key concepts and to evaluate the collaborative learning and understanding of the participants.

**Results:** The text data's were analyzed using conventional thematic content analysis technique and was done manually. The meaning units for analysis were sentences and paragraphs. After repeated reading and understanding, they were listed as subcategories

and categories. They were presented as a simple non-hierarchical typology. The data was reviewed thoroughly to explore the topic in depth and compilation of key ideas was done. The key points are further highlighted using direct quotes from participants (Low inference descriptors) and themes and subthemes emerged from the discussion

**Conclusion:** Despite its exploratory nature, this study offers some insight into complexity of developing a module and the challenges that can occur while implementing it.

**Keywords:** Faculty Development, Medical education, Module, Online learning.

### **Introduction**

Online learning has emerged as an important tool for self -directed learners. Online learning opportunities offered for medical educators were supported by learning principles in medical education. In these distance learning programs various topics of importance are discussed in such a way that that they can bring about the changes to improve the quality of education needed to provide competent health care workers. Research suggests that social networks are a critical factor in influencing behavior and in promoting

resilience. This has been due to its structure, content, progressiveness, utility and dynamic nature in a safe, supportive, and encouraging environment<sup>1</sup>.

Module, a subunit of curriculum is often used for common solutions in key areas of medical education. Modules are interwoven with curricular design principles and constructed mainly by faculties based on learning objectives. Module development isn't a linear procedure but performed via very precise techniques with considerable qualitative team work<sup>2</sup>. It's deliberated per the curricular frame work selected. In view of medical teachers, facing a continuous challenge to achieve effective balance between teaching, research and clinical work the trend of using modules as a teaching-learning approach is becoming very popular. The enriching teaching learning experience of modules is highly appreciated by both students and facilitators. Here our objective is to qualitatively analyze this learning in a scholarly way using Glassick six standards<sup>3</sup>.

### **Materials & Methods**

The study was conducted among the thirty two participants of web discussions conducted as a part faculty development program. The objective of the study is to do content analysis of the online discussions and identify key concepts and to evaluate the collaborative learning and understanding of the participants. Written consent was obtained from the participants at the beginning to document and analyze the discussions.

The participants were from different specialties in India and abroad. Only the academic mails attached to the weekly thread of the topic were included for analysis and social mails and other mails during the period were excluded. There is a monitoring system for the

participants to ensure application of higher order Blooms cognitive domain in responses.

A pre-discussion survey was initially conducted to identify the priority learning needs from the topic module development and to have meaningful associations. Brain storming done to decide what to do, how to do it. Brain storming generates ideas, information, or solutions in short, specific amounts of time. Based on the inputs, week-wise learning objectives were prepared and the activities planned to attain them. Strategies were planned to generate interest among participants and elicit response from non-responders.

The corner stone of this dynamic educational intervention is adult learning, and distance learning principles on which, the month long self-directed, integrated learning took place. Even though from varied disciplines all are academicians, so curriculum and modules are an integral part of their profession. As advised by the skilled facilitator, we used this 'relevance to once own professional development', a leverage to get active involvement of participants and empower their learning

In the activity section, participants were asked to reflect on module developed, challenges faced and tactics used to overcome. An experience-sharing section was scheduled towards the end of the month. There was a uniquely designed template with separate sections for each week reflecting learning that can be put to use professionally and a summary of what facilitated learning. This serves the purpose of providing useful insights to the participants understanding and intention to practice and triggered the participants to learn.

### **Result**

The text of the e-mails exchanged during the discussion in each week were copied to the Microsoft Word and a

45 pages long description is created (Font: Times New Roman, Size = 12 and Single Spacing).

This text data's were analyzed using conventional thematic content analysis technique and was done manually. The meaning units for analysis were sentences and paragraphs. After repeated reading and understanding, they were listed as subcategories and categories. They were presented as a simple non-hierarchical typology<sup>4</sup>. The data was reviewed thoroughly to explore the topic in depth and compilation of key ideas was done. The key points are further highlighted using direct quotes from participants (Low inference descriptors). Themes and subthemes emerged from the discussion<sup>5</sup>.

#### A: Building Up of a Module

##### 1. Basics of module development

a. Different meaning of the term Module like unit, a subset, micro level of curriculum, planned set of educational experiences, set of lesson plans, competency-based tool were identified by participants.

b. The components of Module included a statement of purpose, introduction to module use, intended learning outcomes, teaching -learning activities, media, time table, learning resources, evaluation plan & procedures.

c. The various types of Module were Topic based multidisciplinary modules, problem based, task based.

##### 2. The steps identified in Module development

Module development models selected were ADDIE Instructional design process, Kerns six step approach, Kemp's instructional design model, Sidek's module development models<sup>6</sup>. The Steps involved were setting up a plan- thinking through a rationale (what, why, how) for the module, read and explore options, discussion with peers, colleagues, deciding on aims and intended learning outcomes for the module, exploring the module content, devising learning and teaching

strategies and the appropriate learner support, focusing on assessment, Implementation of collaborative work involving all the stakeholders, evaluation and revision strategy

##### 3. The evaluation of the module

The objectives should be very clear. It needs to be identified whether it had to determine outcome, to assess need for revision of content, to improve methods in teaching/instructional techniques, for assessment or meeting accreditation standards. The blue print of evaluation can be utilized to bring about a change in the module and there is formative & summative evaluation, integrated evaluation, mixed method of evaluation.

The various models of curriculum evaluation can be used for modules also like 1. Tyler's Model, 2. Stake's Model, 3. Roger's Model, 4. Screven's Model, 5. Kirkpatrick's model<sup>7</sup>.

#### B. The Process of Implementation of the Module

##### 1. Key ideas on designing a new module

Learners Identified importance of developing modules for enhancing basic skills, based on the existing scenario and training in educational technology.

“What is planned” = “What is delivered” = “what is learnt”, Identification of gaps in the present learning module, identification of experts in the field, qualitative interviews with the experts and faculties need to be done. Time, faculty and resource management, integration of different departments, team forming are also important. The use of different strategies in implementation and evaluation were planned protocol, problem identification, needs assessment, literature survey, planning meetings, feedback, periodic monitoring, revising the plan, and addition of new information to the core areas. Moreover, we have to focus on SLOs, documentation of the process, proper assessment before implementation

C. Major Issues in Module Development

Table 1: Stakeholders: Administrators and Heads of Departments

Possible challenges to encounter	Number of participants making this point
Lack of awareness	4
Attitude issues	5
Lack of facilities funding, more teaching hours	3
Rules enforced by Regulatory bodies	2
Need for additional staff recruitment.	2
Failure to make collaborations with other department	3

Suggestions to overcome them were by convincing the administrators, involving them, strategic alignments with the curriculum goals, training the existing and motivated faculty, make it as OUR programme, conducting meetings regular discussions.

Table 2: Stakeholders: Faculty members

Possible challenges to encounter	Number of participants making this point
Increased work load	6
Lack of recognition, perks.	4
Lack of interest, motivation	8
Lack of training skills	5
Apprehensive of it success/ effectiveness	7

The suggested solutions were identification of benefits to the faculty; convincing them, involving faculty members, share the success and perks, gentle

reminders, conducting Faculty development programmes, workshops etc.

Table 3: Stakeholders: Students

Possible challenges to encounter	Number of participants making this point
Lack of seriousness	5
Lack of knowledge, interest & involvement	8
If no assessment, no importance is given for learning	10
Feeling of apparently overburdened	7

Suggestions to overcome them were incorporate assessment component, creating awareness and training, monitor activities, making it interactive& interesting, design module after need assessment etc.

D. Analysis of Reflections in the experience sharing session

*From the respondent own words:*

*The views of the teachers were given in quotation marks, and then these views were presented in parentheses to identify the participant in the study*

*“The ‘steps and options’ in module development got clearer” (P1-first participant ).*

*“Learning was facilitated by the shared resources, discussions and further readings based on those”.*

*“It was satisfying experience of co-learning” (P-3 third participant).*

*“Proactive approach helped, they were very thoughtfully planned, they made me think, read and apply”(P4-fourth participant).*

*“The templates provided were useful” (P7-seventh participant).*

*“Making the periodic summaries available to everyone was also a very useful feature” (P14 fourteenth Participant).*

*“Overall, a fantastic effort and role played by the moderators”(P15 Fifteenth participant).*

*“The activity was very practically oriented and it actually gave me a favour of how in reality the approach needs to be”(P26 Twenty sixth participant).*

*“I realized how application of concepts is a great way to learn a concept and the great scope for cooperative learning”(P27 Twenty seventh participant)*

*Learnt how to critically analyse a module and how it could be modified to better (P29 Twenty ninth participant)*

### **Discussion**

The present study has offered a framework for the exploration of steps in module development and effectiveness of modules in medical education. Latha R.K et al studied the dynamics of web discussions in promoting lifelong learning<sup>8</sup>. Additional evidence comes from the study by Abraham RR et al who explored adult learning principles in these online discussions<sup>9</sup>. Qualitative analysis helps in revealing the key ideas in the discussion, understanding why or how things actually work. In general, therefore, it seems to have more clarity to the collective learning happened. The learning happened during discussion satisfied Blooms cognitive levels: Comprehension, Application, Analysis, Synthesis, and Evaluation<sup>10</sup>. There is a translation of theoretical knowledge into a more meaningful contextual exercise. Using reflection to understand the steps in the development of a module, interpretation of compiled image; other "higher order thinking" activities to show on the “experience and learning” exemplified this<sup>11</sup>.

The medical curriculum in India changed after twenty one years to a competency based medical education<sup>12</sup>. Now focus is on student centered, outcome based approach which can promote self-directed, active learning. The faculty can use modular teaching as a part of the curriculum<sup>13</sup>. Modules when designed should have the mission and vision of curriculum and with these guidelines, the content or syllabus is transferred to the modular structure. There is increasing relevance and accountability to curricular development for the medical educators. Since the quality of professionals is a growing concern, training and knowledge in curricular design and module development for educators is important<sup>14</sup>.

This study has examined collaborative learning and understanding of medical educators in module development and establishes the effectiveness explicitly. Our results show that high-quality online discussions were a blended, holistic approach with team building, group dynamics, adult learning principles, active learning and distance learning principles. With the changing contours of medical education this will enable the medical educators to have a pragmatic approach to the problems in module development<sup>15</sup>. The strengths of the study included the systematic preparation and planning for the discussion, faculty guidance during the discussions, coordination among the moderators and their proactive approach, active and enthusiastic participation and effective contributions of the participants which made the in-depth analysis of the topic possible.

### **Conclusion**

Despite its exploratory nature, this study offers some insight into complexity of developing a module and the challenges that can occur while implementing it. Further work is needed to fully understand the

implications of development of modules by faculty to aid teaching learning process as per the new CBME curriculum.

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