

## Impact of CISP II training in CBME Curriculum at Tripura Medical College

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### Abstract

**Background:** Medical teachers trained in conventional education system were in need to go through new faculty development programme, Curriculum Implementation Support Programme (CISP), for effective implementation and functioning of Competency Based Medical Education (CBME) curriculum. The medical teachers trained with CISP were shown with much better perceptions of CBME Curriculum Implementation comparing to those of the medical teachers who were yet to be trained. For this a well organised educational process for faculty development programme was mandatory. At the same time, evaluation of any educational process also was essential which assessed the impact on educational quality of the faculties as well as reflected on that organized programme.

**Methods:** This cross-sectional study was conducted among twenty-six (26) medical teachers to evaluate impact of Curriculum Implementation Support Programme – CISP II. The faculty trainee had given their pre and post-tests and feedback on a rating scale of 1-5.

**Results:** The average number of test score had been increased pre workshop to post workshop significantly ( $p = 0.00$ ) by 11.75 (CI 10.70 – 12.80). After workshop the importance of the topics covered in the workshop had increased [39.62 (CI = 2.75 – 5.03)] to participant significantly ( $p = 0.00$ ). The knowledge level also had increases [39.50 (CI = 2.30 – 4.28)] significantly ( $p = 0.00$ ).

**Conclusion:** It was observed that, after two days of CISP II training, the participant faculties had given more importance on topics of new curriculum and they had perceived more knowledge about the sessions during post CISP II training period.

**Keywords:** CBME; CISP; Faculty; GMER; IMG.

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### Introduction

A major change in medical education had necessitated the implementation of new competency based medical education (CBME) curriculum. CBME curriculum was

outcome-based approach which had focussed to prepare competent Indian medical graduate (IMG). So that, IMG with their knowledge, technical skill, clinical reasoning

and ability of empathetic communication would be able to take the responsibilities of healthcare needs of the society. [1-3] Medical Council of India had mandated Curriculum Implementation Support Programme (CISP) training for all the medical teachers to implement this CBME curriculum. The CISP training had improved the ability of medical teachers to collaborate with other departments in implementing the CBME curriculum in an integrated manner.[1]

Medical teachers trained in conventional education system were in need to go through new faculty development programme, CISP, for effective implementation and functioning of CBME curriculum.[5] The medical teachers trained with CISP were shown with much better perceptions of CBME Curriculum Implementation comparing to those of the medical teachers who were yet to be trained.[1] So, for proper implementation of CBME curriculum, medical teachers was needed to go through faculty development programme.

A faculty development programme always brought a positive environment in teaching-learning environment of the institution which in turn had transmitted a good impact among the faculties.[2] But for this a well organised educational process for faculty development programme was mandatory. At the same time, evaluation of any educational process also was essential which assessed the impact on educational quality of the faculties as well as reflected on that organized programme. Evaluation process of a programme basically started with a plan before the beginning of the educational programme. It was simultaneously implemented while the programme progressed. Pre-test and post-test evaluation had been recommended as a good method of evaluating a programme. This concise pre/post-test evaluation had brought about the evaluation of program and for its future improvement.[2] The efficacy of the training methods identified the various

aspects of medical teachers' training and programme curriculum improvement.

With this view, the study was conducted on two days training programme on CISP– II for medical teachers to implement CBME curriculum in Phase II MBBS students. So, the objectives of the study were: to evaluate the impact of CISP II training for CBME curriculum at Tripura Medical College; to measure the perceived changes about the importance of different topics of medical education covered during 2 days training programme of CISP II; to measure the perceived changes in knowledge on different topics of CBME Curriculum covered during 2 days training programme of CISP II.

### Materials & Methods

This cross-sectional study was conducted in the Department of Anatomy and Medical Education Unit at Tripura Medical College & Dr. B.R.A.M. Teaching Hospital in two (02) months period from August to September, 2021 with the approval of Institutional Ethics Committee.

Twenty six (26) medical teachers from the post of assistant professor to professors had participated in two (02) days Curriculum Implementation Support Programme (CISP II) training for implementing Competency Based Medical Education (CBME) Curriculum in Tripura Medical College & B.R.A.M. Teaching Hospital. Medical teachers below the post of assistant professor were excluded from the study. The study variables were a) For subjects – designation of teachers, gender; b) For observation – pre-test and post-test questionnaire, feedback of the CISP II programme.

The study was conducted to evaluate the impact of Curriculum Implementation Support Programme – CISP II. The sessions of the training were on Competency based medical education (CBME); IMG- Goals, roles and competencies; Deriving objectives

from competencies; Linking competency objectives to Teaching Learning Methods (TLM); Graduate Medical Education Regulations (GMER) 2019; Electives; Foundation Course; AETCOM module; Early Clinical Exposure (ECE); Student Doctor-Clinical Teaching; Alignment & integration; Skills training Assessment in CBME; Aligning assessment to competency objectives & TLM; Curricular governance. The faculty trainee had given their feedback on a rating scale of 1-5, with 1 being the lowest and 5 being the highest rating. The rating was given before a session and just after finishing the session for importance of the topic in a session before and after the training and for the knowledge of a faculty trainee had before and perceived after the training.

The pre-test and post-test questionnaire had same questions of 20 in numbers. The pre-test questionnaire was given to fill up on the first day before the sessions of the training had started and the post-test questionnaire

was given on second day after finishing of all the sessions. These were given at the last to find out the improvement of knowledge among the participants. Each of the questions was awarded with mark/s for correct answer and no mark was given for wrong answer or unattempted answer. The total marks for each pre-test and post-test were 20. At the end of the sessions the post-test questionnaires and feedback forms were collected. Statistical Package for the Social Science (SPSS) version 20.0 software was used to calculate arithmetic mean and Standard Deviation (SD), Paired student's t Test. A p value of <0.05 (1-tailed) had taken as statistical significance.

### Results and Observations

A total of 26 medical teachers (21 male and 05 female) had participated in this CISP– II Training with different designations starting from assistant professor to professor. Majority (80.77%) of the participants were male and 19.23% of the participants were female.

**Table 1: Distribution of the study participants according their gender and designation (n = 26).**

Sl no.	Designations of medical teachers	Gender		Total & [Percentage (%)]
		Male	Female	
1	Assistant Professor	11	4	15 (57.69%)
2	Associate Professor	5	1	6 (23.08%)
3	Professor	5	0	5 (19.23%)

The lowest to highest pre-test score was 0.0 vs 7.0. Whereas lowest to highest post-test score was 9.0 vs 18.5. It was observed that, there were improvements in post-test responses than pre-test responses by medical teachers which were statistically significant.

**Table 2: Comparison and correlation of responses of the trainee medical teachers participated in CISP – II training (n=26)**

Responses	Pre-test (Mean±SD)	Post-test (Mean±SD)	Mean Difference (CI)	Paired Student's t Test (p < 0.05)
Total responses	9.50±4.42	18.81±2.37	9.31 (7.28 – 11.33)	0.000
Correct answers	4.08±1.87	15.85±2.63	11.76 (10.69 – 12.85)	0.000
Incorrect answers	6.12±4.03	2.96±1.15	3.15 (4.96 – 1.35)	0.001
Not attempted	9.71±4.43	1.19±2.37	8.51 (10.46 – 6.57)	0.000
Test score	3.98±1.76	15.73±2.64	11.75 (10.70 – 12.80)	0.000

[\*Paired t test, p value < 0.05 taken as a significant; CI = Confidence Interval]

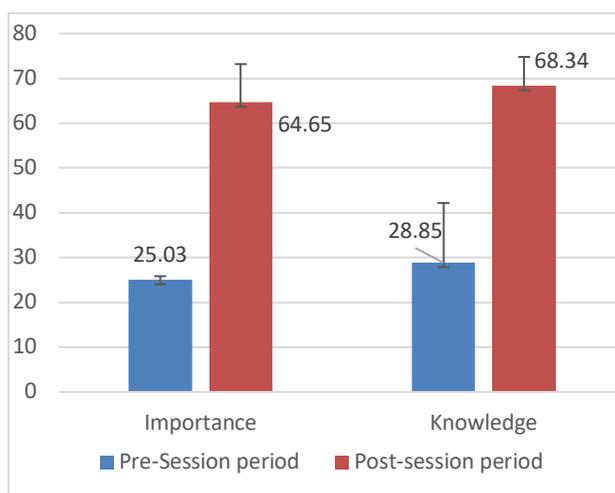
It was observed the average number of responses has been increased significantly ( $p = 0.00$ ) by 9.31 (CI 7.28 – 11.33). The average number of Correct answers has been increased significantly ( $p = 0.00$ ) by 11.76 (CI 10.69 – 12.85). The average number of incorrect answers has been decreased significantly ( $p = 0.00$ ) by 3.15 (CI 4.96 – 1.35). The average number of not attempted answer has been decreased significantly ( $p = 0.00$ ) by 8.51 (CI 10.46 – 6.57). The average number of test score has been increased pre workshop to post work shop significantly ( $p = 0.00$ ) by 11.75 (CI 10.70 – 12.80).

**Table 3: Pre-training to post-training comparison of changes of perceived importance and knowledge of different topics covered in 2 days training (n = 26).**

Feedback	Pre-Session period (Mean±SD)	Post-session period (Mean±SD)	Mean Difference (CI)	Paired Student's t Test ( $p < 0.05$ )
Importance of topics	25.03±10.82	64.65±8.52	39.62 (2.75 – 5.03)	0.000
Knowledge of topics	28.85±13.34	68.34±6.44	39.50 (2.30 – 4.28)	0.000

[\*Paired t test, p value < 0.05 taken as a significant.]

Importance of the topics to participants before and after each session was evaluated. Evaluation of the knowledge of the participants regarding the topics before and after the training programme was also conducted. In the post session period, medical teachers had opined that, the topics of the sessions in CISP – II were more important for proper implementation of CBME Curriculum. These were reflected in their higher rating to the topics of discussion during the post session period. It was observed that medical teachers had gained more knowledge regarding the CBME curriculum implementation during post training period.



**Figure 1: Pre-training to post-training comparison of changes of perceived importance and knowledge of different topics covered in 2 days CISP II training (n = 26)**

It has been observed in the present study that, after workshop the importance of the topics covered in the workshop have increased

[39.62 (CI = 2.75 – 5.03)] to participant significantly ( $p = 0.00$ ). The knowledge level

also increases [39.50 (CI = 2.30 – 4.28)] significantly ( $p = 0.00$ ).

### Discussion

The quality of medical education is determined by teachers, students and the curriculum.[2] The implementation of the CBME curriculum had shifted medical education towards implementing the health care needs of India.[1] The learner must acquire knowledge; develop skills, attitudes throughout the course of their curriculum to demonstrate them in the delivery of safe and effective patient care.[5]

Medical teachers in non-CBME system work within time-based educational structures to transmit the knowledge, skills, and attitudes required of a good physician. But in CBME curriculum, competencies in medical content, as well as in all other core clinical domains, are contextual and integrated, and are taught, observed, and assessed according to explicit criteria.[5]

CBME is learner-centered, offers flexibility in time, and focuses on all the three domains of learning together; the teaching–learning activities would need a change in structure and process. Since it focuses on outcomes and prepares students for actual professional practice, teaching–learning activities would be more skill-based, involving more clinical, hands-on experience.[6]

Medical teachers trained in conventional systems needed faculty development to prepare them to function effectively in a competency-based medical education (CBME) system. Faculty development programme could provide knowledge about CBME, training in teaching techniques in

different domains of medical practice and new strategies for providing the authentic and regular assessment that is an essential aspect of CBME.[5]

In the present study, a total of 26 medical teachers (21 males and 5 females) had participated in the training where male participants were more and female participants were less as compared opposite to the study conducted by Anuradha M *et al.*[2], where 29 (24 females and 5 males) of faculty had participated. The medical teachers were with different designations from tutors to professors, whereas in our study the tutors were not included as the CISP II training has included the medical teachers from assistant professors to professors. It was observed that, the participant assistant professors and professors were more (57.69% vs 41.38%) and (19.23% vs 6.89%) respectively comparing to less associate professors (23.08% vs 34.48%).[2]

In the present study, the lowest to highest pre-test score (0.0 vs 7.0) was improved after post-test score (9.0 vs 18.5) with statistical significant. Similar was observed in the study conducted by Chaudhuri A *et al.*[8] where pre-test score was low compared to post-test score [lowest vs highest pre-test score: 3 vs 14 and lowest vs highest post-test score: 8 vs 24].

A common method for assessing the baseline knowledge and acquired knowledge about the topics in a medical education training was pre-test and post-test evaluation which compared the knowledge improvement obtained about the concepts after workshop.[2]

**Table 4: Comparison and correlation of pre-test and post-test scores**

Responses	Present study (n=26).			Mukkapati A <i>et al.</i> [2] (n=29) ,			Baral N <i>et al</i> [7] (n=26)			Dhungana GP <i>et al.</i> [8]			Chaudhuri A <i>et al</i> [9](n=30)		
	Pre-test (Mean±SD)	Post-test (Mean±SD)	Paired Student' s t Test (p < 0.05)	Pre-test (Mean±SD)	Post-test (Mean±SD)	Paired Student' s t Test (p < 0.05)	Pre-test (Mean±SD)	Post-test (Mean±SD)	Paired Student' s t Test (p < 0.05)	Pre-test (Mean±SD)	Post-test (Mean±SD)	Paired Student' s t Test (p < 0.05)	Pre-test (Mean±SD)	Post-test (Mean±SD)	Paired Student' s t Test (p < 0.05)
Test score (total score)	3.98±1.76	15.73±2.64	0.000	3.655±1.798	12.552±2.080	<0.001	13.23±2.59	16.1±1.68	<0.001	26.7±5.0	33.6±5.6	<0.001	7.44±3.19	1.18±4.6	<0.01
Incorrect answers	6.12±4.03	2.96±1.15	0.001	6.138±2.199	1.448±1.270	<0.001	-	-	-	-	-	-	-	-	-
Not attempted	9.71±4.43	1.19±2.37	0.000	5.207±2.896	1±1.414	<0.001	-	-	-	-	-	-	-	-	-

[\*Paired t test, p value &lt; 0.05 taken as a significant.]

Pre-test and post-test evaluation was conducted by Anuradha M *et al.*[2] where the knowledge improvement was observed by the participants in the post-test compared to the pre-test. This was observed similarly in the present study and study conducted by Baral N *et al.*[7], Dhungana GP *et al* [8] and Chaudhuri A *et al.*[9]

Henderson M *et al.*[10] had opined that, an important role for effective feedback was to improve the decision-making capacity of a learner leading to improve the learning outcome. The learner should evaluate their performance by self-assessment, judgemental skill and self-reflections. Effective feedback had provided new insights in learners for useful improvements.

**Table 5: Pre-training to post-training comparison of changes of perceived importance and knowledge of different topics covered in 2 days training.**

Feedback	Present study (n=26) (Lowest score:5, Highest score: 75)			Chaudhuri A <i>et al.</i> [9] (n= 30) (Marks obtained out of 5)		
	Pre-Session period scores (Mean±SD)	Post-session period scores (Mean±SD)	Paired Student's t Test (p < 0.05)	Pre-Test scores (Mean±SD )	Post-test scores (Mean±SD)	Paired Student's t Test (p < 0.05)
Importance of topics	25.03±10.82	64.65±8.52	0.000	1.73±0.09	4.79±0.06	< 0.0001
Knowledge of topics	28.85±13.34	68.34±6.44	0.000	1.68±0.07	4.86±0.06	< 0.0001

[\*Paired t test, p value < 0.05 taken as a significant.]

An effective improvement and good feedback were observed in the faculty knowledge after teacher training workshop. The good feedback was observed with all the sessions and from the willingness of the participants to attend such more programmes in future.[2]

In the present study, all the medical teachers had given their feedback anonymously. The medical teachers' feedback regarding the increase in knowledge was observed in the present study from pre-session period to post-session period (28.85% vs 68.34%) [Table 5]. Similar feedback was observed by Khan AM *et al.*[11] where the participants not only had increased in knowledge but they had higher satisfaction level. They had gained their confidence to develop and implement CBME curriculum.

### Conclusion

Changes from traditional curriculum to CBME curriculum needed careful designing of the new curriculum. The phasic strategic planning and implementing through curriculum implementation support programme (CISP I and II) was possible with the adoption of new curriculum by the medical teachers. This present study had contributed to evaluate the faculty development programme. It was observed that, after two days of CISP II training, the

participant faculties had given more importance on topics of new curriculum and they had perceived more knowledge about the sessions during post CISP II training period. These will be contributing for the implementation of CBME Curriculum as well as to the improvement while formulating the future faculty development programme.

### Strengths and Limitations:

This is the first study conducted on CISP II training in our state. The study was conducted as a cross-sectional study, so no follow up on further implementation by each participant medical teacher in respective department was conducted. Though the sample size of the study was less, but this CISP II training had emphasised on more knowledge of CBME Curriculum to the participant medical teachers as well as the resource persons conducting the training programme where many new challenges and changes were overcome during the process of organization and modification for programme implementation.

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## References

1. Ghosh A, Bir A. Need of evolution in MCI teacher's training programs: faculty perceptions of a tertiary care medical college in India. *J. Evid. Based med. Healthc.* 2020;7(23):1113-8.
2. Mukkapati A, Mada P. Effectiveness of a teacher training workshop: an interventional study. *Journal of Clinical and Diagnostic Research* 2018 Feb;2(2): JC09-12.
3. Shah N, Chetna Desai, Jorwekar G, Badyal D, Singh T. Competency-based medical education: an overview and application in pharmacology. *Indian Journal of Pharmacology* 2016 Oct;48(Supple)S5-9.
4. Basheer A. Competency-based medical education in India: are we ready? *Journal of Current Research in Scientific Medicine* 2019 Jan-Jun;5(1):1-3.
5. Dath D, Iobst W. The importance of faculty development in the transition to competency-based medical education. *Medical Teacher* 2010 Aug; 32:683-6.
6. Shah N, Desai C, Jorwekar G, Badyal D, Singh T. Competency-based medical education: an overview and application in pharmacology. *Indian J Pharmacol* 2016;48: S5-9.
7. Baral N, Gautam A, Lamsal M, Paudel BH, Lal Das BK, Aryal M. Effectiveness of teachers' training in assessment techniques: participants' perception. *Kathmandu Univ Med J.* 2011;3(3):189-92.
8. Dhungana GP, Piryani RM, Chapagain ML, Neupane M. Effectiveness of teacher training conducted at chitwan medical college, Bharatpur, Nepal. *J Chitwan Med Coll.* 2015;5(12):01-05.
9. Chaudhuri A, Paul S, Nayak K. Study to assess the impact of faculty training as an essential component for successful implementation of competency-based medical education. *J West Bengal Univ Health Sci.* 2021;2(2):4-11.
10. Henderson M, Phillips M, Ryan T, Boud D, Dawson P, Molloy E, *et al.* Conditions that enable effective feedback. *Higher Education Research & Development* 2019;38(7):1401-16.
11. Khan AM, Gupta P, Singh N, Dhaliwal U, Singh S. Evaluation of a faculty development workshop aimed at development and implementation of a competency-based curriculum for medical undergraduates. *J Family Med Prim Care* 2020; 9:2226-31.