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CERTIFICATION OF CLINICAL SKILLS IN PHYSIOLOGY: ROLE OF A TUTOR IN WHITTILING COMPETENT IMGs' - A DISCERNMENT

Running Title: Role of Tutors in certification of clinical skills'.

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ABSTRACT

Background: The NMC - India is evolving and with the implementation of 'CBME' and clinical skills' certification has become core model in the section of assessment towards actualization of a competent IMG. The swotted syllabus has detailed proficiencies that an undergraduate pupil necessarily should accomplish and undoubtedly demarcated teaching learning stratagems for the same.

Methodology: An extensive organised search of scientific literature was coxswained using electronic databanks and was restricted to article(s) or abstracts available in English in journals with use of words alike "Medical education", "Physiology", "Certification", etc.,

Conclusion: Careful consideration of depth of the student learning, catering to the teaching method(s) best taken by student(s), proper evaluation with constructive

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feedback to students for self- are supposedly the appropriate way(s) to look into the future with better and more competent IMGs’.

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1. INTRODUCTION

Medical education in India is evolving, and The ‘National Medical Commission’ has amended the Undergraduate medicine curriculum. ‘Competency based undergraduate medical education curriculum often referred to as CBME,’ was put into effect from the academic year 2019-20 (Sahadevan S et al., 2021). CBME focuses on skill acquisition by the students. The swotted syllabus has detailed proficiencies that an undergraduate pupil necessarily should accomplish and undoubtedly demarcated teaching learning stratagems for the same, also. With this objective in observance, early clinical exposure/ECE, integrated teaching, skill development, attitude-ethics-communication/AETCOM, and self-directed learning/SDL have been familiarised. There would be an accent on communiqué skills, simple medical expertise(s), and proficiency.

1.1. CBME Curriculum: An Overview

There is exemplar transference from old-style instructive schoolroom-centred training to knowledge acquiring environs where there is importance on learning by reconnoitring, enquiring, smearing, debating, investigating, replicating, co-operating, and undertaking. The recognition of this requirement is cherished by a momentarily heightened attention of interval to these approaches and the evaluation methodologies.

Table 1 Purpose(s) of implementation CBME curriculum for IMGs’ - An overview

(Medical Council of India, 2018)

Curriculum	Competency Based Medical Education
	Aim: Take in consideration the National goal of ‘Health for all’
Objectives	1. Focus on common medical conditions
	2. Provide comprehensive care
	3. Accentuate psycho-socio-economic extents of wellbeing and ailment(s)
	4. Configuration with Nationwide healthiness primacies

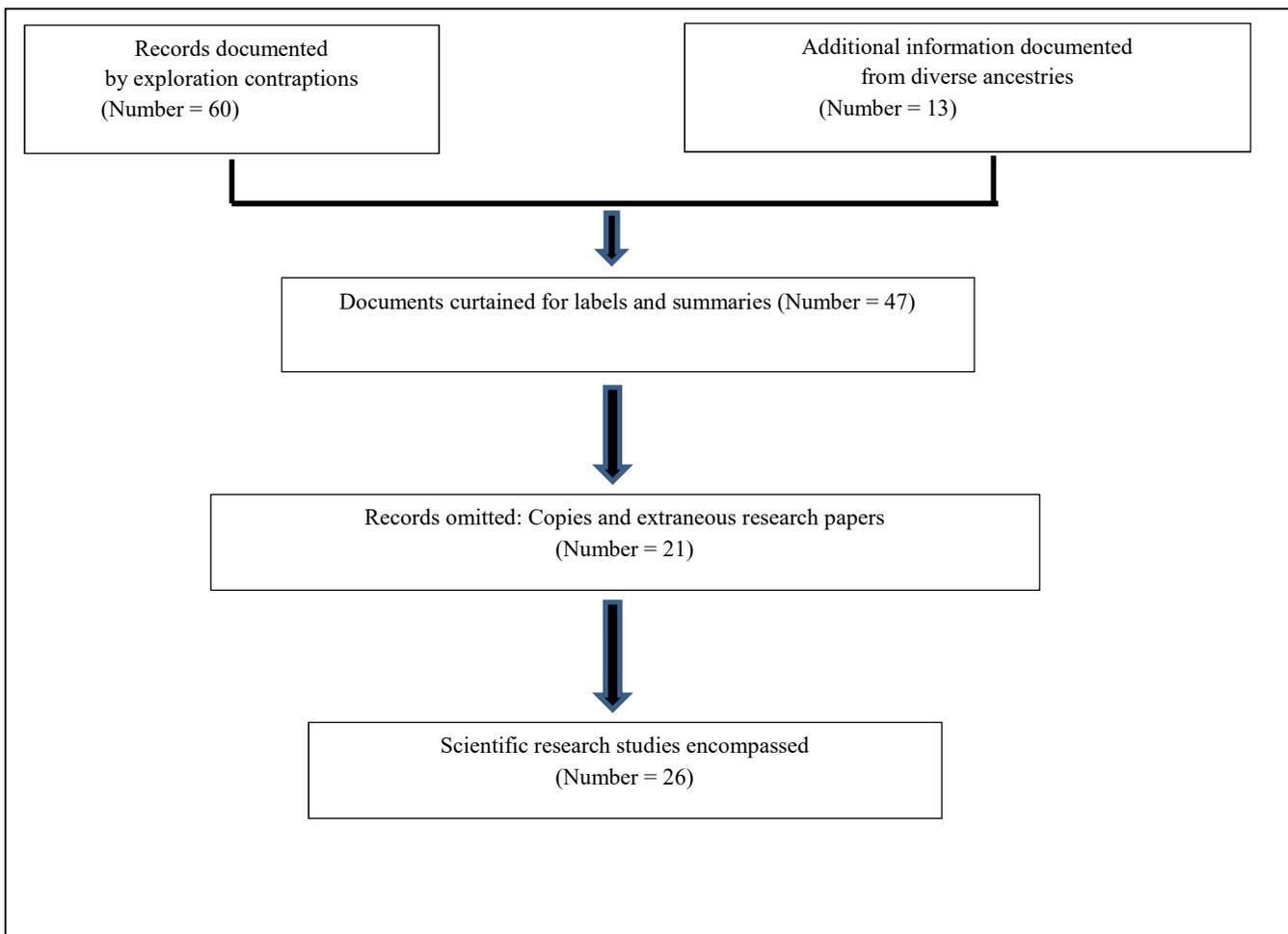
This revolution in medical curriculum requisites to be reflected by parallel changes in the teaching learning strategies and the reception of novel roles by medical teachers with respect to promoting educational thinking. In the subject of Physiology, students are expected to demonstrate skills and teachers have to certify competencies (Sahadevan S et al., 2021). CBME erudition accentuates abilities essential for virtuous therapeutic exercise as the aforementioned not only emphasizes on learning perilous aptitudes needed for accomplishment in clinical field but also offers values with background for assessing enactment. The basic piece of any competency-centred teaching is that it assesses learning occurring in a teaching platform, reasonably than time. It permits for identical, independent and multisource valuations. This slant has been casted-off for teaching in different medicinal specialties (Jacob KS, 2019). Certification would provide a validation of the skill to the student and would provide confidence to the student. Certification is crucial as it is an effective instrument which propels student learning and is worthy of a lot of consideration. The medical education structure has three facets: Teacher, student and curriculum. Teachers form the pillars of the medical education system. Teachers play a vibrant role in student learning and provide guidance in healthcare delivery which becomes foundation for future practice. A medical teacher’s duties with respect to academics varies from didactic teaching to supervising acquisition of skills to curriculum implementation (Harden & Lilley, 2018). Now with newer curriculum being followed, it is evident there is paradigm shift from ‘Teacher centred’ to ‘Learner centred’. In the traditional set-up the teacher was considered as an authority and one who provides information. In the learner centred approach students are taking more responsibility of their own academic knowledge. The role of a teacher doesn’t end there but the daunting task of adapting to a new curriculum and the efficient implementation of the same, so that everyone gets the most out of it, comes under her/his umbrella only. Therefore, it is necessary for teachers to be aware of their role they

need to perform for better student learning. Hence the authors would like to highlight role of a teacher in certification of clinical skills in Physiology to enable the pupils of medicine with essential knowledge, skills, attitudes, ethics, professionalism and receptiveness, required for functioning aptly and efficiently as doctors of principal connexion in the civic, which is most crucial objective of implementation of this syllabus for 'Indian Medical Graduates' (Medical Council of India, 2018).

2. METHOD(S)

An extensive organised search of scientific literature was coxswained using electronic databanks and was restricted to article(s) available in English or abstract in English in journals with use of words alike "Medical education", "Physiology", "Certification", "Feedback", "Learner centred", "Skills", IMG, etc., Wary assortment of keywords was done and then exploration was schematised thereafter: Continuing medical education[MeSH Terms], clinical skills[MeSH Terms], Skill certification[MeSH Terms], Feedback in medical education[MeSH Terms], Teaching learning[MeSH Terms], Medical students[MeSH Terms]. Tutelages signifying a resilient connexion amid teaching learning including other professional attributes desired in an undergraduate medical student were also designated. On requirement, stratagem was modified to every single databank. The method borned 26 interrelated pupillages.

Figure 1 Intangible charter: Quest scheme



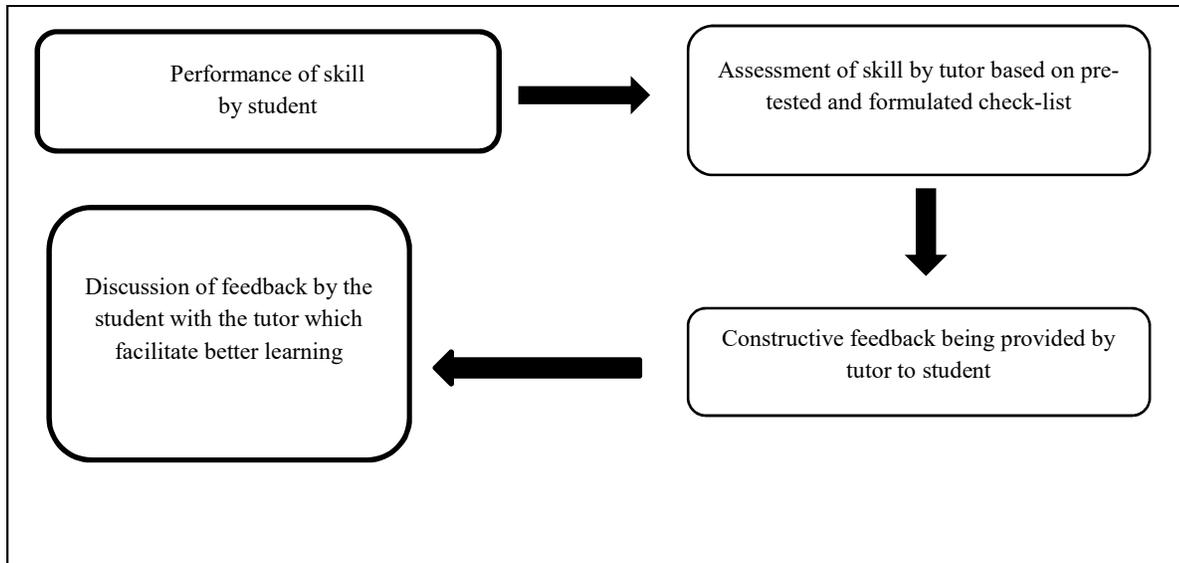
3. ROLE(S) OF TEACHER AS AN ASSESSOR: PHYSIOLOGY – SKILL CERTIFICATION

3.1. Feedback: 'FACTS' criteria proves to be beneficial

A good teacher is an asset to the students, the organization and the society as well. Teachers are the most crucial contributors to the successful implementation or failure of any teaching learning strategy. A teacher will

be a vigilant assessor during the certification process. During the exercise, the teacher should understand the depth of the student learning. The solo influential factor that boosts active learning is prompt feedback that also accomplishes the purpose of certification.

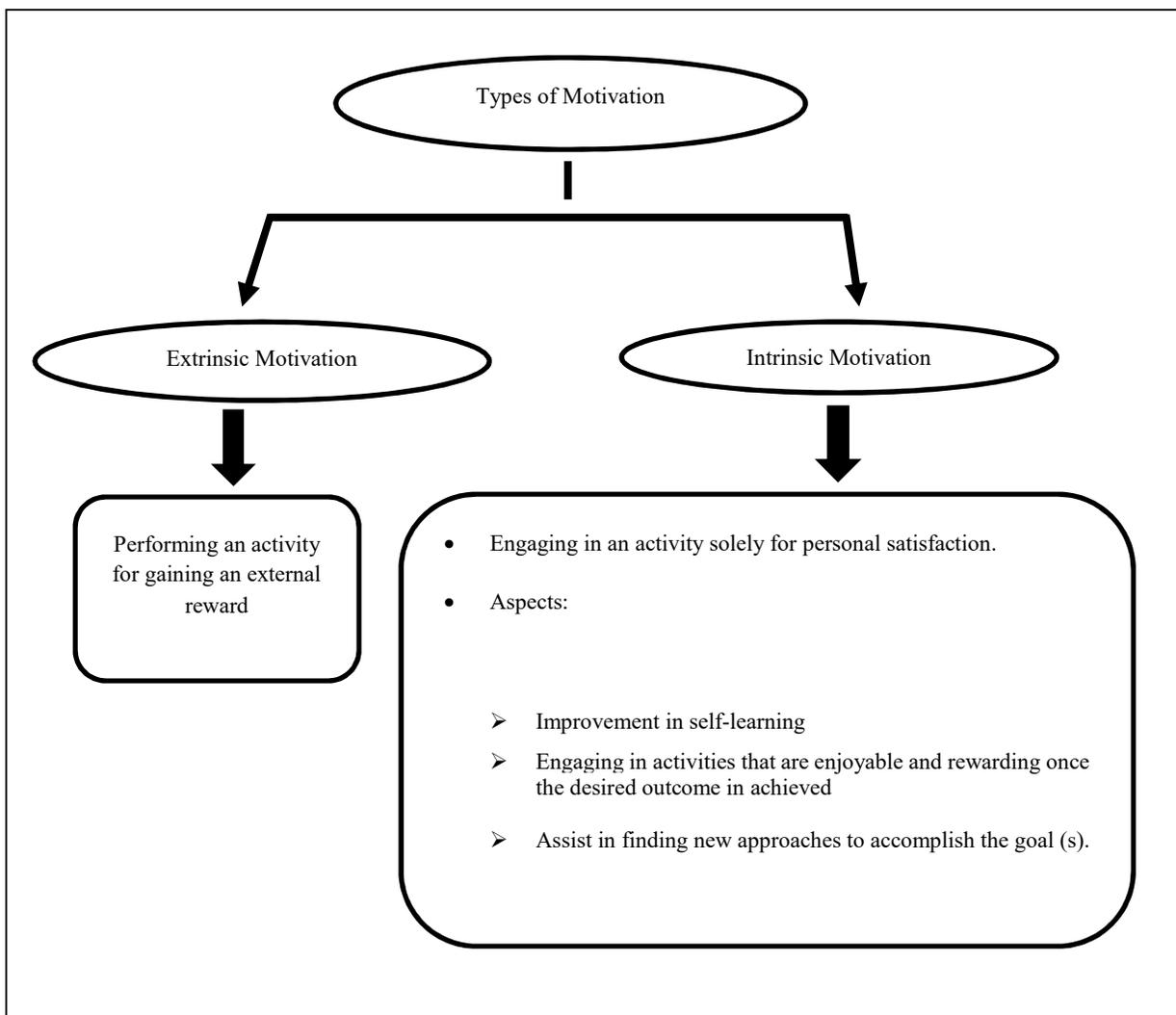
Figure 2 Process of giving feedback



To make the feedback provided more motivating; it should be constructive in nature, more of an evaluation rather than judgmental. Since students are the most affected by all these measures, a valuable feedback is an instrumental means of teaching efficiency along with active involvement and impactful input from students is considered to be vital in the success of newly implemented teaching evaluation systems (Chen & Hoshower, 2003). Studies have shown that judgmental feedback especially in a group, demotivates students (Chappuis & Stiggins, 2002). Researchers have proposed that feedback should emphasize on student strengths, provide apt recommendation for improvement and avoid comparisons with peers (Black & Williams, 2010). This would be extremely beneficial for slow learners as it stresses on the fact that students can improve if efforts are made (Ames C, 1992). Feedback is the knowledge gap amidst the existing expertise and desired acquisition of skill display (Ramaprasad A, 1983; Sadler Dr, 1989). Feedback 'FACTS' criteria should be incorporated - 'Focused, Accurate, Clear, Timely & Specific', whereas feedback concentrates on a student's present performance, feed-forward emphasizes on the consequent activities need to be done to improvise (Ferrell and Gray, 2016). A blend of retrospective and futuristic approach would enhance student learning in comparison to singular one. Feed-forward approach in certification would be closely monitoring students, give them the opportunity to freely commit mistakes, correct those mistakes constructively as well as give time to students for self-reflection so that they learn from them before summative examinations. This will promote a healthy and nurturing learning bubble which not only will help students in their evaluative tests but during future practice as well. Such an integration of the same with application based learning will lay a stout foundation for the budding IMGs and may lead to wonders yet not known. Another crucial yet covert factor in the whole process of exchange of feedback, reviews and ideas among the assessor and the student is the medium in which the information is being passed on. Not only the teacher should have a positive and constructive intent while giving the feedback, but he should be able to reflect his intentions in his actions and words as well. Any misinterpretation or misunderstanding during the process might knock down the student's confidence instead of boosting their morale which may hinder further growth and improvement in the future. Also harsh criticism will make the student reluctant to show up for further sessions, making the whole workup unfruitful. So the transfer of information should be in such a manner that the data as well as the emotions behind are conveyed to incubate interest regarding the subject and to uphold the motivation to excel out themselves in further sessions. Feedback is a cardinal element of clinical skill training and is vital in student learning. Research output from the previous decade has reported cumulative awareness regarding the complex feedback interaction along with understanding of dynamics of student engagement; acceptance, feedback quest behavior and environment contribute to feedback efficiency (Kornegay JG et al., 2017). Feedback quest behavior is emphasized as a significant learner quality, as it synchronizes the platform for a fruitful give and take of information during the feedback session. Even though there is a lot of emphasis on feedback delivery, the teachers are unacquainted with elements of feedback interaction. This can be attributed to other administration

and teaching responsibilities leaving the teachers with little time to analyze, evaluate, keep in touch and work upon the newer concepts in medical education literature (Kornegay JG et al., 2017). The conclusion is that the time restraints of both student and teacher contribute to limiting the number and quality of feedback interactive sessions. Literature has revealed that bed side teaching sessions are the best occasions for provision of feedback on the basis of direct observation. Bed-side rounds serve as an excellent platform for feedback and also have an effect on institutional culture. Ultimately, to implement routine feedback while adding suggestions for boosting learning strategy, educators have to envision feedback as a part of learning principles (Kornegay JG et al., 2017). Educationists have accomplished in both formative and summative assessment that across various fields (Inclusive of medicine), the crucial factor which determines the impact of feedback is the learning culture where the interface happens. The learning culture contributes to teacher-student bonding, sets up the platform for routine feedback and validates performance goals. The teachers in Physiology, who aim to strengthen feedback routine should reflect on initiating a cultural norm that stimulates mutual interchange of precise, time-bound, achievable feedback between students and teachers (Kornegay JG et al., 2017).

Figure 3 Effects of Motivation on learning (Alcivar, Quimi & Barberan, 2020)



3.2. Teacher - A Known Motivator

Certifications make it clear to teachers where to concentrate their efforts and draw attention to the frequent mistakes that students make. As the abilities, motivations, learning styles, and objectives of students vary widely, the certification process helps cater to the needs of an individual student. Certification fosters a warm, welcoming environment for students by blending education with interpersonal growth, peer support, and empathy. It also

offers teachers an excellent platform to comprehend learners' perspectives and develop their potential. The instructor is a crucial figure in building a rapport based on trust that will inspire and motivate the students to learn (Ospina RJ, 2006). For instance, be on the lookout for occasions to coach in a systematic process and make them aware of the level of progress they might achieve. A competent teacher is renowned for their expertise and skills as a facilitator, advisor, inventor, patient listener, and, most importantly, a motivator. It is well known that the human brain forms ideas built on prior knowledge and, as a result, influence one's behaviour. It receives motivating stimuli from external information, which causes an individual to develop a sense of self-confidence while acquiring new skills (Alcivar, Quimi & Barberan, 2020). There are two different types of motivation employed in learning: intrinsic and extrinsic motivation and it is essential to motivate students through educational activities that change their attitudes.

Motivational strategies must be expanded in an educational context to benefit student learning. Students must be able to generate values and demands in their knowledge and interest in the skills they develop during their training (Including training in physiology). To increase student productivity in the classroom and uphold their teaching's core ideals, educators must encourage students more positively both within and outside the classroom (Alcivar, Quimi & Barberan, 2020). Another advantage of motivation-based education is that students who want to learn can be taught by instructors who share that same desire. There is no question that medical education requires using contemporary, engaging, multimodal learning and teaching techniques. Still, as the value of these innovative tactics may be undervalued at times, it is crucial to assess their efficacy and worth. The decision to pursue a medical specialty after graduation is undoubtedly multifaceted. The primary considerations for choosing a medical specialty, however, would be excitement and an inner sense of appropriateness for a particular field of medicine if we assume that all graduates experience the same difficulties when looking for a job. Therefore, the retention of highly motivated students in certain medical specialties could be a sign of the success of the motivation-based teaching concept (Guajardo et al., 2019; Klincora M et al., 2019). The hands-on approach to learning offers understanding of a topic and aids in identifying personal fit or sense of appropriateness, and the motivational method of teaching immensely impacts enthusiasm or excitement. As motivation is a crucial factor in the quality of learning and success in students, the lack of it may likely be why teachers occasionally see medical students who are discouraged, vulnerable, and have lost interest in their studies (Pelaccia & Viau, 2017). The motivational science approach to teaching and learning has identified the seven critical questions that need to be addressed for ongoing and upcoming motivational science research.

- (i) What are students seeking?
- (ii) What spurs pupils' interest in the classroom?
- (iii) How do students accomplish their goals?
- (iv) Are students aware of their goals or what drives them?
- (v) How do cognition and motivation interact?
- (vi) What causes motivation to evolve and change?
- (vii) How do context and culture influence?

The answer to these fundamental questions should be the key for the teacher to effectively motivate students to develop strategies for staying motivated, overcoming obstacles like self-doubt, and developing skills.

3.3. Teacher - A Fair and Accurate Evaluator

Certifications of skills are non-graded assignments. Hence certification of clinical skills, especially in Physiology is displayed with a distinct viewpoint may be a benchmark of what a student can learn and how much more scope for improvement exists. There are thought-provoking interactions which involve feedback, reflection as well as peer learning. Students also realize that learning skills are more important than marks or grades and are able to see the bigger picture in clinical practice. The value of assessment is indubitable since it reveals the priorities of students, how they spend their time, and how they see themselves. Assessment is a pivotal element of assisting students in their learning (Pintrich PR, 2003; Brown et al., 2013). The learning activity prepares the students for the real world that students are able to encounter. Given how complicated it is, it is arduous to focus on only the certain contents, utilize the apt level of abstraction, employ the right communication channels in the

short time that is available. Regular modules with the fixed structure, often repeatedly focus on imparting prepared materials to large number of students. Hence, classes that use a feed-forward evaluation approach give students the opportunity to explore, gather feedback, and sharpen their learning. The evaluation is concentrated on the approach of activities analysis, in which the activities completed in the lab, including those related to Clinical Physiology, are hyped-up using the components of attentiveness, perfection, and responsibility. The research reports benefit teaching staff on a variety of levels. First, the significance of incorporating evaluation in the process of learning for students as well as active engagement is explored. For the arbitrators, it offers proof of the value of learning experiences beyond the constraints of the normal curriculum, the necessity of funding additional events, and, finally, the value of a participatory approach and experiential learning in the process of building humanitarianism and active citizens (Perko I, 2018). Researches have shown that assessment of student's understanding of any concept or perfection of any skill cannot be declared complete without a satisfactory, stabilised, fair and transparent evaluation programme. By satisfactory evaluation, it can be comprehended that during evaluation or certification of clinical Physiology skills, the professor should have an unclouded vision on the areas the students are going to be evaluated which is possible only if the process of evaluation is structured and also after evaluation, the students are in peace with the decisions made (Wani & Dalvi, 2013). The next known pillar of an excellent evaluation scheme is stability. It should be such that it does not need to get changed regularly and should withstand the test of time and at the same instance, it should be welcoming enough to accommodate latest advances in Physiology. A fair design should be able to decide and arrange demonstration of various skills according to their importance in future practice. For example: skills like cardiopulmonary resuscitation should outweigh skills like usage of instruments for performing various amphibian experiments, though the latter is now being taught through video demonstration for understanding the basic Physiological concepts since, cardiopulmonary resuscitation is a life-saving skill, the scales bend down more towards the former. Transparency is the backbone of any programme intending for any kind of evaluation, be it scientific, technological or anything diverse. The students should know the areas they will be judged based upon during the test and the things they need to improve afterwards. Also, satisfaction of a student after their evaluation is as mighty factor as the satisfaction of the evaluator. An accurate and precise evaluation by the assessor with the tools like such effective and near to perfect roadmaps for the task not only makes the job easier and interesting but also maintains a universe with various dimensions open for further development of some and improvement from the current state, for others. Therefore, the choice of means for assessing medical education should be based on the extent that the assessment is intended for. Similarly, interpretation of evaluation results must take into account the construct addressed by the data collection instrument utilized as well as its specific confounding factors (Schiekirka S et al., 2015).

3.4. Teacher - Needs to be a Collaborator

In present-day society, collaboration has become the standard norm in almost all organizations. In corporate sector, teams from different branches work together on common projects either face-to-face or virtually to satisfy the needs of client and also to benefit the organization. To pursue opportunities in funding and sponsorship, the non-profit organizations work together to avail services for their target groups. The organizations associated with education, the development of standing or ad-hoc or working groups, team up with a variety of practitioners and it has turned out to be a classical strategy of colleges and universities. This collaboration in educational society helps to resolve the problem and to make appropriate decisions. Successful collaboration or partnership is mainly grounded on common goals, clear vision with mutual respect and honesty (Muronaga & Harada, 1999). To be encouraged to collaborate, all partakers must primarily observe some personal value in teamwork and have confidence that they have the knowledge and skills essential to be productive collaborative associates (Small RV, 2002). During the certification classes in Clinical Physiology practical(s), an excellent opportunity is provided to teachers to bond with their other colleague. It may appear like a no brainer but a factual discussion is merely not possible without appropriate teamwork, which provides a safety net, helping in projecting one's thinking and developing ideas for the benefit of the patient. For example, in general physical examination, a component to be checked in any patient is nutritional status and if found to be a case of under-nutrition or overweight, a collaborate effort, especially between a Primary healthcare Physician and a nutritionist can work wonders for the patient and hence emphasizing on this concept of multidisciplinary team work during Clinical Physiology practicals, especially during the certification process will reinstate it in student's mind (Miozzari AC et al., 2011). The collaboration or partnership shouldn't end between the teachers - it can be applied throughout the very first year among pupils of Medicine, as well. The activities can be planned in such a way that it gives opportunities to students to work as a team and learn from each other. It is being observed that collaborative learning not only developed students' higher-level thinking skills but also boosted their confidence & self-esteem. Group project can enhance the knowledge by demonstrating the study material and also can improve social and interpersonal skills. This trains students to learn how to work as a team with diverse types of learners and grow their leadership

skills. Working together as a team has been known to improve and create a platform for effective learning experience. The collaboration of teacher positively influences the student's success and lets the educators to explore novel territory.

4. ASSESSMENT OF SKILL CERTIFICATION: POINTS TO PONDER

4.1. Limitations and Time constraints

The stakes are high in the implementation of CBME, hence there is a lot of pressure on teachers to constantly give constructive feedback, individual attention, reflection and assessment. With a decline in student: teacher ratio, it could also result in time constraints for teachers. Even though certification of skills gives teacher a better idea about student understanding and progress, it also increases their work-load substantially. Certification of skills requires an additional effort from teachers in adjunct to all the summative assessments. The teachers must embrace new responsibilities of converting a traditional classroom into congenial learning atmosphere. Teachers must prepare in advance and exclusively for individual feedback. The stake also lies on the organisations to balance resource utilisation and educational efficiency.

4.2. Completion of skill certification in university examination point of view

Certification of skill is non-graded assessment of student learning which is provided in a non-judgemental atmosphere. Certification provides the student an idea of their skill procurement at that point of time. If students are unable to perform one particular skill, the teacher can reinforce the technique or teach it in a different manner. Hence the skill certification provides better practice opportunities before final summative assessments. However further studies are required to assess the long term benefits of skill certification in the Indian medical educational set-up.

5. CONCLUSION

This new-fangled CBME programme which transfers emphasis from gaining of information to proficiencies, is the foremost advancement on the way to update medical education strategy within India through the plunge being to make medical education more patient centric and outcome oriented and hence emphasis is being given on training IMGs' in appreciating and managing medical conditions frequently observed in health centers (Frank JR et al., 2010). Clinical skill training in Physiology is an important part in making students competent in assessing patients. Focus on traditional medical disciplines cannot be totally ruled out as consistent interface amid experts and general medical practitioners is required for medical care as it provides a level of confidence and professional satisfaction which are known essential components towards providing better patient care.

Future track...

India, being a Nation of people with diverse culture, a through collaboration between the tutors and practitioners in medical field including Community Health workers, are required, might be with some strategical modifications according to the socio-demographic and cultural differences, for the IMGs' to efficiently act as physicians of principal contact in public, most important need of the country, at present.

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7. CONFLICT OF INTEREST

No conflict of interest - Declared.

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