

## Evaluation of the Process of Educational Programme of Doctor of Medicine (MD - Radiology) and Diploma in Medical Radio-Diagnosis (DMRD) in Jawaharlal Nehru Medical College, A Constituent Unit of Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi (Meghe), Wardha – A Study Protocol

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### ABSTRACT

There is not much significant work in regard to utilization of evaluation as modality either of 'Academic programmes' & 'Product'. Literature search has revealed that publications on said count are rare. As such present study is for availing modality of evaluation for Postgraduate 'Academic Programme' of Doctor of Medicine (MD) Radiodiagnosis and Diploma in Medical Radiodiagnosis (DMRD) programme in terms of operational processes with regards to evaluation of process of education programme using Danish International Development Agency (DANIDA) parameters in accordance with Development Assessment Committee of Organization for Economic Cooperation and Development. To evaluate process for educational programme of MD and Diploma in DMRD in Department of Radiodiagnosis of Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (deemed to be university), Sawangi (Meghe), Wardha in terms of their Relevance, Efficiency, Effectiveness vide DANIDA evaluation criteria. This will be a Prospective descriptive study conducted for a Period of 6 months. Which will employ a standard curriculum questionnaire for ascertaining 'Relevance, Efficiency, Effectiveness, Impact and Sustainability' vide DANIDA guidelines to evaluate MD and DMRD educational programmes will be given to participating learners and members of teaching staff. Participants (n=30, 19 learners, 11 faculty) will be divided into three groups, namely Group-1 (Neutral Opinion), Group-2 (Agreeing and Strongly Agreeing Opinion) and Group-3 (Disagreeing and Strongly Disagreeing opinion) and rate their satisfaction level on rating scale of 10. Deciphering Relevance, Efficacy, Effectiveness, Impact and Sustainability of MD Radio diagnosis and DMR Dedication programme as against fulfilment of 'set out objectives' through 'assessment of level of satisfaction. Responses in respect of relevant parameters will deliver level of Relevance, Efficacy, Effectiveness, Impact and Sustainability in both academic courses.

**KEY WORDS:** RADIODIAGNOSIS, PROGRAMME EVALUATION, MD, DMRD.

### INTRODUCTION

The term 'evaluation' stands for proper, well-organised and systematic testing of the merit, worth as well as significance of the subject/ learner under consideration.

(Medina-Mora et al. 2021) This process is carried out by a set of laid down standards/ guidelines. This process bears true potential to guide an organization, a project, a programme or any other endeavour as such in the form of either an intervention or an initiative to assess its aim and concept to pave way in making further decisions or to delineate the degree of achievement and materialization with reference to the aim and objectives having been actually accomplished. (Lotty et al. 2020) As such, the main objective here apart from adding an overlook into prior/ previously set/ existing endeavours is to commit to reflecting and assisting in future shaping and development.

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As a modality, evaluation as an entity does not find its deep roots in the domain of higher education in India including the medical education as a whole. It is inter changeably.

1. Relevance,
2. Efficiency,
3. Effectiveness,
4. Impactand
5. (Danida et al. 2006) Sustainability

In terms of the governing literature, the core ambit, operation and coverage of the various sub-units have been crystallized appropriately. Relevance - In the context of 'relevance' the core component therein pertains to the level/ degree upto which the objectives of an educational programme process are in concordance with actual requirements of beneficiaries. Efficiency - In the context of 'efficiency' it has been put as level/ degree of conversion of economic inputs into results. Effectiveness - It has been stipulated to be level/degree upto which educational programme's objectives have been accomplished, or are planned to be achieved based upon their significance.

Impact - It has been stated to be bidirectionally positive or negative, primary/ secondary effects produced by the educational programme are produced on a long term basis in any way possible on the specified timeline. Sustainability - Likewise, in regard to the sustainability it has been observed to be perpetual benefit derived from educational post provision and completion of any developmental assistance, if any.

**Aim:** To evaluate the process in vogue for the educational programme of Doctor of Medicine (MD) and Diploma in Medical Radio-Diagnosis (DMRD) in the Department of Radiodiagnosis of Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (deemed to be university), Sawangi (Meghe),

**Objectives:** To evaluate educational programme of Doctor of Medicine (MD in Radiodiagnosis in Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (deemed to be university), Sawangi (Meghe), Wardha in terms of its relevance, efficiency and effectiveness under DANIDA evaluation criteria. To evaluate the process of educational programme of Diploma in Medical Radio-Diagnosis (DMRD) in Radiodiagnosis in Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (deemed to be university), Sawangi (Meghe), Wardha with regards to its relevance, efficiency and effectiveness under Danida evaluation criteria.

As such, in the present study, in terms of the crystallized Aim and resultant set out objectives there in the evaluation process is limited to the 'Process' in vogue for the educational programmes namely MD-(Radiodiagnosis) and Diploma in Medical Radiodiagnosis (DMRD) at Jawaharlal Nehru Medical College, Sawangi Meghe,

Wardha a constituent unit of Datta Meghe Institute of Medical Sciences (Deemed to be University), and not the 'Product' there of.

In view of the aforesaid incorporation crystallized in the 'Aim' of the present study commensurate with the chosen theme the criterion 'Impact and Sustainability' which are the parameters exclusively applicable to the evaluation of 'Product' could not have been availed in the present study.

## METHODS

**Type of study:** Prospective descriptive study

**Period of Study:** 6 months

**Method of Study:** A standard curriculum questionnaire (Annexure-II) for ascertaining the 'Relevance, Efficiency, Effectiveness, Impact and Sustainability' vide Danish International Development Agency (DANIDA) guidelines generated by Development Assessment Committee of Organization for Economic Cooperation and Development, educational process in MD Radiodiagnosis and DMRD educational programme will be given to the participating learners and members of the teaching staff in order to evaluate the 'process' of the said educational programmes. The participants will be divided into three groups, namely Group-1 (Neutral Opinion), Group-2 (Agreeing and Strongly Agreeing Opinion) and Group-3 (Disagreeing and Strongly Disagreeing opinion). Further, the participants will be required to rate their satisfaction level on a rating scale of 10.

**Participants in the study:** The post graduate learners registered in Department of Radiodiagnosis, Acharya Vinoba Bhave Rural Hospital, associated with Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (Deemed To Be University), Sawangi (Meghe), Wardha and members of the teaching staff thereat.

**Sample size:** 30 with a break-up of 19 (Learners) and 11 (Members of the Teaching Faculty).

**Inclusion criteria:** All the learners and teaching faculties willing to give informed consent for the present study.

**Exclusion Criteria:** All the learners and teaching staff NOT willing to give informed consent for the present study.

**Statistical Analysis:** The data generated and appropriately tabulated in the present study would be subjected to suitable statistical methods for the purposes of deciphering its validity.

**Expected Results:** Deciphering Relevance, Efficacy, Effectiveness, Impact and Sustainability of MD Radiodiagnosis and DMRD education programme as against fulfilment of 'set out objectives' through 'assessment of the level of satisfaction of targeted beneficiaries' towards making desired changes, if any.

## DISCUSSION

Educational evaluation encompasses over a plethora of activities like student assessment, student measurement, student testing, programme as well as personnel evaluation, academic accreditation and curriculum upgradation. The term 'Evaluation' has been used vaguely in relation to other similar terms like 'Assessment and Testing'. It has to be borne in mind that evaluation does refer to same thing which is a k into assessment and testing. However, in real sense it is 'a systematic approach and attempt thereto to obtain information for making better judgments or decision' was stated by Lynch in the year 1996 in his treatise at its Page No. 2 therein. Historically speaking Educational Evaluation was pioneered by United States of America and then its spread to all other parts of the Globe. As a matter of fact Madaus and Stufflebeam in the year 2000 have made an attempt to divide history of evaluation almost a century and half years old into seven periods. They are:

1. Age of reform - prior to 1900
2. Age of efficiency and testing - from 1900 to 1930
3. Tylerian Age - from 1930 to 1945
4. Age of innocent - from 1945 to 1957
5. Age of development - from 1958 to 1972
6. Age of professionalization - from 1973 to 1983
7. Age of expansion and integration - from 1983 to 2000

Factually speaking several evaluation models came to be created between 1940 to 1960. The four cardinal models created during the said period are-

1. Tyler's Objective Model
2. Stake's Responsive Model
3. Scriven's Goal Free Model
4. Stufflebeam's CIPP (Context, Input, Process and Product) Model

Taking into consideration the present scenario evaluation in education including Medical Education is greatly paid heed in the context of improvisation in its quality and the nature thereto to assure that set out objectives pertaining to educational programme have been squarely materialise. It is true that each of the evaluation models so conceived have their own strengths and weaknesses and hence the evaluators need to consider their needs in order to make choice of the relevant model as would be well suited and applicable for the targeted purpose. Speaking for the Postgraduate Specialty Programmes in the domain of Medical Education it is imperative to note that the said Programmes in regard to the various contours relevant to them are depicted in the governing 'Regulation' notified by Medical Council of India in 'Regulation' governing postgraduate medical education in terms of provisions incorporated at section 33 of Indian Medical Council Act, 1956, as amended from time to time, where by it is notified by Medical Council of India upon approval by Government of India, as a condition precedent incorporated thereunder.'

The said 'Regulation' prescribes various titled nomenclatures of the Postgraduate qualification programmes along with other stipulated prescriptions in regard to the minimum requirement with reference to 'infrastructure', number of 'teaching beds', constitution of 'teaching unit', required 'clinical material' both in quantum and variety for teaching and learning as a whole. The requirements of 'eligibility' governing recognition of a 'postgraduate teacher' as incorporated in the said Regulation on Postgraduate Medical Education are prescribed in another regulation titled as 'Regulation on Teachers Eligibility Qualification' notified under section 33 of the Indian Medical Council Act, 1956 as revised and updated from time to time.

The word 'postgraduate qualification' as contemplated in the governing Regulation on Postgraduate Medical Education entails inclusion of 'Postgraduate Degree' as well as 'Diploma Programme'. The basic difference between the said two Postgraduate Programmes namely Degree and Diploma is limited to the duration / period of the study which in case of a Postgraduate Degree Programme is of 'three years' as against 'two years' in case of Postgraduate Diploma Programme. Yet another differentiating feature is that the mandatory prescriptions for Postgraduate Diploma Programme in the governing regulation do not prescribe for 'thesis writing', submission and resultant evaluation of thereto as is applicable in case of the 'Postgraduate Degree Programme'.

The statutory prescription of 'thesis' in a Postgraduate Degree Programme in the governing regulation on Postgraduate Medical Education entails a scheme of its submission for evaluation at least six months before the commencement of the theory/ summative examination for the said Postgraduate Degree to be conducted by the concerned examining and affiliating University. The results of assessment of the thesis in terms of its approval as contemplated vide the scheme of assessment prescribed in the governing Regulation which is mandatory and binding for the examining Universities to be adhered to is a condition precedent for a learner to be eligible to take the theory / summative examination and clinical practical viva-voce examination thereupon.

As an abundant caution it is also stipulated that for any reason, if the result of 'thesis' is not declared in time, the learner may be provisionally admitted to the theory /summative examination and there on for the practical linal and viva voce assessment with the permission of the Vice Chancellor of the concerned examining University. However, the applicable rider is that the results of the said assessment will not be declared with out the result of the thesis in terms of approval of the same by the assessors in accordance with the governing prescriptions. It is also provided that incase the thesis is not cleared by the concerned examiners as is required under the governing scheme of examinations Rules the conditional performance at theory, practical and viva-voce stands annulled.

The Postgraduate Medical Education Regulations by Medical Council of India and the Competency Based Curriculum for the various Postgraduate Degree and Diploma courses that are included in the governing schedule have been placed on its website and thereby are in public domain. The said curricula have been recently updated in the 'competency mode' by the Academic Committee of the Medical Council of India.

It has been notified by the regulatory apical council governing Postgraduate Medical Education (Medical Council of India) that the examining Universities shall adopt the said curricula and also the scheme of the examination for the purposes of teaching, learning and training of the registered students for the said programmes under their respective ambit and jurisdiction and also their assessment through the Summative Examination for the purposes of certification. However, it is open for the examining Universities to further augment the said curricula, but in no manner they are entitled to compromise with the same in any manner. The scheme of examination stipulated therein for governing postgraduate qualifications including Degree and Diploma are binding in nature and mandatory in character for the examining Universities to strictly adhere to.

The nomenclatures of the postgraduate Degree programme in terms of the official notification of the Medical Council of India with reference to Radiology have undergone a change from time to time. The original nomenclature which was in vogue was 'MD (Radiology)'. This was changed to MD-Radiodiagnosis and MD Radiotherapy respectively in the year 1973. However, the nomenclature of Diploma has never undergone any change ever since its inception and has been named as 'Diploma in Medical Radiodiagnosis (DMRD)'. The Postgraduate Degree as well as Diploma program in every recognized specialty including Radiodiagnosis is 'Residential' in character in terms of prescribed stipulations in the governing Regulation notified by the Medical Council of India.

"The Radiology residency training program is of 3-year duration. The junior residents are subjected to training in both 'Conventional aspect of radiology' and 'Modern aspect of imaging techniques' to make them well versed with broad discipline of Radiology including multiple imaging modalities such as 'Ultra-sonography, Color Doppler, Computed tomography and Magnetic resonance imaging'. Learners are assigned 'Thesis' on specific to picinradiology under guidance and supervision of aduly recognized/ approved postgraduate teacher, on which they are supposed to work on and submit a final draft of the same to university post five academic terms. Learners are periodically assessed every 6 months (may vary) with both Theory & Practical modes of exams for prescribed syllabus covered during the specified time period.

Learners are expected to maintain a logbook with guiding remarks from their allocated guides. The logbook is designed in such a way that it mentions about number and details of the 'radiological procedures' as done

and 'assisted', lectures attended by the learner, various presentations made during the course of study.

The teaching and training schedule entails academic activities like seminars on important topics, Journal clubs involving multiple journal updates on relevant topics and Case discussions on interesting case/ patients if any that are regularly carried out in Department as a part of prescribed programme commensurate with operational curriculum. The scheme of examination entails examination of the 'Thesis' and thereupon the summative theory examination which has four theory papers and Practical test that includes long cases and Short cases, spot diagnosis on radiological images and Viva-voce. (Arora et al. 2014, Radiodiagnosis et al. 2012 and Maheswari et al. 2016) There is no maximum number of attempts for the learner to successfully pass his/her exam." (Arora et al. 2014, Radiodiagnosis et al. 2012 and Maheswari et al. 2016) Educational syllabus is categorised appropriately by the Medical Council of India (MCI), the apex body governing the 'Norm, Rules and Regulations' with regards to medical education under the following competencies / domains as follows:-

- A. Cognitivedomain
- B. Affective domain
- C. Psychomotor domain

With regard to evaluation of process of education programme, the parameters as per the Development Assistance Committee of the Organization for Economic Cooperation and (Danida et al. 2006) Development definition of 'evaluation' which has been adopted by Danida and all major development agencies internationally, the five evaluation criteria that should be used in assessing process of an educational programme are: Relevance, Efficiency, Effectiveness, Impact and Sustainability.

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