REVIEW ARTICLE

Workplace-based Assessment: An Important Tool for Trainee Assessment

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Summary:

There has been a great concern that trainees are seldom observed, instructed, assessed and provide feedback during their training period. It is customary that most of the post graduate institute relies on end of assessment or so called single shot final assessment and pass or fail is the only outcome. Recent trends in medical education states on giving importance of formative assessment and in training assessment. As physicians become ever busier in their own clinical practice, being effective teachers becomes more challenging in the context of expanding clinical responsibilities and shrinking time for teaching. Trainers are often unaware of their role for the trainees. They often reluctant to assess the trainees due to lack of monitoring at faculty level. Now a day trainees are assessed mainly on non documented methods and not in a structured way. Moreover there is little if any feedback is being given to them. The modern medical education given emphasize on workplace-based assessment rather than end of assessment or final assessment.

Key words: workplace, assessment, Mini CEX, Portfolio, Direct Observed Procedural skill.

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Introduction:

Assessment is very important component of medical education, the effectiveness of which is frequently underevaluated and taken lightly. Teaching has traditionally been considered a means of imparting knowledge and assessment that of estimating how much has been learnt, in real sense recapitulate. The concept of assessment in clinical scenario further demands hand on training, therefore assessing in real scenario or near real scenario.[1] In most of the centers this kind of assessment is still means a way of end of the course assessment or end of training assessment. But assessment during training period is under utilized or not utilize at all. In modern medical education emphasis has been given more in favor of formative assessment than summative assessment. One kind of this summative assessment is in training assessment those must be documented, structured and with adequate feedback to the trainees. According to Bangladesh Medical and Dental Council, recognized additional degrees should be approved and endorsed by the council. There are no specific criteria for workplace based assessment as a recognized tool but it mix up with the criteria of clinical training [2] . The clinical skills development is at the centre of medical training. The importance of good history and physical examination in making a correct diagnosis cannot be over emphasized. This is substantiated by studies that have reported that the correct diagnosis can be established in more than 75% of patients based on history and clinical examination alone in different clinical settings. The backbone of clinical skills lies in several soft skills such as communication skills, professionalism, and ethics- also referred to as non-cognitive component of clinical skills. It is this non-technical component of one's abilities that determines how well a person uses his/her clinical skills in health care delivery. Therefore it is not only important to include a formal training for developing these soft skills along with the technical clinical skills in the medical curriculum but also an effective assessment plan for the same. These non-cognitive skills are not easily amenable to assessment by traditional assessment methods. There is some effort to assess these skills by methods that assess competence such as the OSCE but these remain confined to the examination situation and the results may not be generalized to the actual performance in real life[3].

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Traditional system of trainee assessment

Now days, in most of the centers trainees are assessed by direct observation by his own trainer during their job period by a non documented method. The trainer himself decides whether the performance of the trainee is adequate enough to pursue an independent practice after completion of the degree or not. The trainer is actually following his ancestor's attitudes, set criteria and values in such a case. Most of the times a trainer follow the set rules of the institute to whom the trainee will appear in the examination. This completion is usually certified by a single sheath of certification countersigned by the head of the institute.

Rationale

Formative and summative assessment are two important concepts, which direct the design of an assessment system. The decision to employ summative, formative or a combination of both forms of assessment will guide the instrument selection, the manner by which assessment is implemented, the amount of manpower needed, the score interpretation and the use of assessment result . Assessment can be conducted both in an artificial situation and in an authentic workplace situation. A combination of the two is perhaps most desirable. Assessment in examination situation provides students appropriate timely feedback, and stimuli to improve. When conducted in a workplace situation with observed feedback, assessment gives students practice in different clinical context in a non-threatening environment[4]. Assessment methods would include consideration of the balance between formative and summative assessment, the number of examinations and other tests, the balance between different types of examinations(written and oral), the use of normative and criterion judgement, and the use of personal portfolio and log-books and mini clinical evaluation exercise (MiniCEX). It would also include systems to detect and prevent plagiarism[5].

Miller(1990) took forward thinking about assessment in the healthcare profession by identifying four levels of assessment: knows, knows how, shows how and does. Miller's work focused attention on a largely unassessed level: what the doctor does in real-life settings[6]. Rethans et al(2002) emphasized that scores awarded to general practitioners by simulated patients in an examination setting were significantly higher than the scores awarded for the same tasks in a real life setting. This and other studies have drawn attention to the need to assess what healthcare professionals do in practice. Traditional examinations cannot assess what the candidate 'does' in real life settings and a battery of new assessment tools is needed to assess performance: work based assessment[7].

a. Mini Clinical Evaluation Exercise (Mini CEX)

The Clinical examination exercise, or the Mini CEX, is a clinical examination, similar to the objective structured clinical examination. Unlike OSCE, it is done with a real patient, complaining of a real symptom such as dyspnoea, rather than a standardized patient. This is a work-based, in training assessment which involves rating the student on an activity which already occurs in current training and provides student with immediate feedback on his/ her performance. The primary aim of the mini CEX is to provide feedback on clinical performance. The assessor should comment on areas of strength, areas where which could be improved upon and help the student to develop an action plans as to how a trainee improve these aspect of performance[8]. In a Mini-CEX examinee is engaged in an authentic workplace based patient encounter. His exercise can be done at outpatient department, in an emergency observation ward, in a speciality clinic days, or even in busy ward settings. Students can be assessed on different clinical problems that they encounter from within the curriculum in a range of clinical settings. The students are assigned assessors for each assessment who observes the student, assesses the

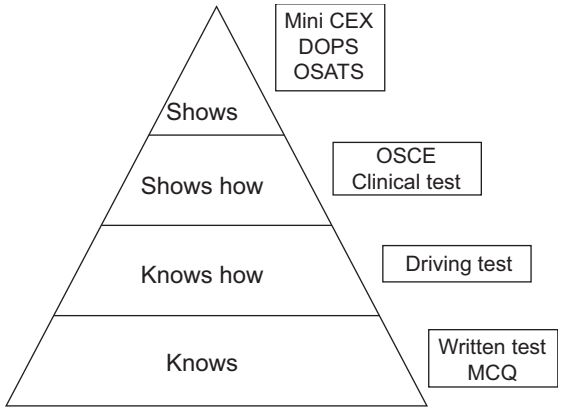

Fig.-1: *Framework for clinical assessment. Miller's Pyramid.*

competency and then gives constructive feedback. The encounter usually lasts about 15-20 minutes and the encounter spends 5 minutes giving the examinee feedback. In Canada, The Mini CEX is replaced by Clinical encounter cards (CEC) . The basic purpose of this assessment is strategy is also to score trainee performance based on direct observation of a patient encounter. The encounter card system scores the following dimensions of observed clinical practice: history taking, physical examination, professional behavior, technical skill, case presentation, problem formulation (diagnosis) and problem solving (therapy).In addition to capturing the quality of the performance, 4X6 inch score cards also provide space for assessors to record the feedback given to the trainee at the end of the encounter[9].

The Mini-CEX was developed for use in a postgraduate setting but it has been used also in undergraduate education. In this situation the duration of the encounter is often increased from 20 to 30 minutes.

b. Case based discussion

The case based discussion is mainly runs in the training program of United Kingdom and Australia is a structured interview in which practitioners discuss aspects of a cse in which they have been involved in order to explore their underlying reasoning, decision making and ethical understanding. Actually it is an extended form of Mini CEX. It can be used in a variety of settings such as clinics, wards, OPD settings, follow up clinics or at assessment areas. Mainly it is directed to the trainee, who select the case for his better understanding and improves his judgement capability of patient management. The trainee himself selects difficult cases from various subsets and and present the case to the particular assessor for about 15-20 minutes for presentation and another 10 minutes will allow for discussion and crossing. Sequential and varied case has to be select to ensure the coverage of all spectrum of the disease process. A comparison with different assessment methods has shown that assessment carried out using the case based discussion is able to differentiate between doctors in good standing and those identified as poorly performing. The basic difference between Mini-CEX and case – based discussion is that trainee takes the whole responsibility of the process and decide time, frame and faculty. But the format for the assessment is predetermined.

c. Direct Observation of Procedural Skills (DOPS)

The direct observation of procedural skills (DOPS) can be used to assess a student/trainees performance and provide feedback during a range of procedures which they will encounter, such as closure of a cut wound of the thigh, performing a lumber puncture of a child, or repair of an episiotomy wound. The procedural skills assessed using DOPS range from relatively simple and common procedures, such as vene-puncture, to more advanced surgical skills/intervention skills such as endoscopic retrograde cholangio pancreatography. The assessment by an experienced doctor is carried out using either checklist of defined tasks, a global rating scale, or a combination of both[10]. Although Direct Observation of procedural skills is similar to procedural skills documented in log books, the purpose and nature of these methods differ significantly. The recording of procedures is common to both of them, but log books are usually designed to ensure that trainees have simply performed the minimum number required to be considered competent. The provision of structured feedback based on observation of a performance is not necessarily part of the log book process. Moreover, the procedure is not necessarily based on Competency to be assessed in procedural skills involves more than just dexterity. Darzi suggest that in addition to manual dexterity a surgeon needs judgement and a sound knowledge base. Other important skills include getting consent from the patient and communication skills. Checklists and rating scales contain items which reflect the necessity of competency in these domains also. Commentators are generally positive about the educational value of DOPS. The feature of DOPS which is most commonly cited as being responsible for its high educational value is the opportunity it creates from more experienced doctors[11].

d. Diaries or logbooks

Diaries kept by trainees may provide useful insights into trainee achievements and other qualitative information. Logbooks can indicate the accomplishment of a list of tasks. Logbooks can record a trainees day to day activities at workplace settings and also academic activities he attained or achieved. If maintained properly, diaries and logbook provide a comprehensive account of what the trainee has done. The logbook demonstrates the scope of the trainee's

Box: 2

Twelve tips for successfully implementing logbooks in clinical training

1. Use all resources you can obtain and do not repeat work that has already been done
2. Involve all stakeholders and embed the introduction of logbooks into a change management process
3. Keep it short, simple and precise
4. Mind legal issues
5. Use a handy logbook formal
6. Make the logbook an integral part of the curriculum
7. Mentor and supervise learning objectives
8. Provide time and space for teaching and learning
9. Establish an easy going workflow
10. Implement an evaluation cycle to optimize logbook-location-fit
11. Inform staff and trainees
12. Train supervising physicians and mentors

activities, while the diary may additionally demonstrate progression of learning[12]. Logbooks provide a clear setting of learning objectives and give trainers and clinical teachers a quick overview of the requirements of training and an idea of the learning progress. Logbooks facilitate communication between the trainee and the clinical teacher. They help to structure and standardize learning in clinical settings especially when multiple sites are involved. Standardization of logbooks in clinical training can increase the number of performed procedures . the analysis of logbooks can reveal weak points of training and can evaluate whether trainees have fulfilled the minimum requirements of training. In practice, however, the use of logbooks is often deficient. Some studies have shown that logbooks do not improve clinical training and are not used for learning. Sometimes clinical staff members are not aware of the existence of the logbook. Logbooks may be used inconsistently. Documentation do not always show achieved objectives and gaps. Documentation can be faked by just collecting signatures without performing the learning objectives. Still there are scope more improvements and researcher suggests some tips to implement logbook in a better way[13].

e. Portfolios

A portfolio is a collection of student work, which provides evidence of the achievement of knowledge, skills, attitudes, understanding and professional growth through a process of self reflection over a period of time. When portfolios were originally introduced in education as instruments for authentic assessment, they closely resembled the portfolios of architects and artists , which has been described as a portable case of keeping, usually without folding, loose sheets of papers, drawings or photographs. Portfolios have been used for several decades to assess students, for example in the fine arts where material such a s artwork produced by students is an important as written material. The crucial difference between a logbook is student reflection. Reflection is the purposive, deliberate revising of an experience, to explore and extract the learning offered by the experience. Reflection can promote learning, personal and professional development and improvement of practice[14]. Uses of portfolios has a clear links between assessment and learning, attempts to assess students areas such as attitudes, personal attributes and professionalism that are difficult to assess by traditional methods. Portfolios are increasingly being used as tools for assessment. Portfolios has got an immense ability to provide the documentation that a trainee keeps throughout his training period. A trainer can anytime assess the progress of the training and also the outcome he achieves.

A framework is necessary to ensure that the portfolio contains appropriate evidence of student achievement of the learning outcomes that are to be assessed. The framework should be flexible to allow inclusion of material selected by the individual student.

In a broader sense portfolios are being used to contribute to the development of individual teachers

and to the improvement of the teaching profession as a whole. When constructing a portfolio, teachers are encouraged to determine their own learning process and their professional development. Various aspect of teacher functioning can be incorporated in the portfolio assignment. These are : a) environment b) behavior of performance c) competencies d) professional identity e) mission . The teachers themselves complete the portfolio assignment where they describe critical incidents in their development as a teacher, set learning goals, select teaching activities, compose a profile of good teacher, idea about student and student 's learning , role of teacher and future plan for improvement[15].

Portfolio can also stimulate reflection, because collecting and selecting work samples, evaluations and other type materials that are illustrative of the work done, compels learners to look back on what they have done and analyze what they have and have not yet accomplished.

Research shows that the role of the mentor is crucial to the successful use of portfolios aimed at learning from experience. Reflection is an important concept in this framework, which relates to changing cognitive structures. Research has shown that meta-cognitive skills, such as reflection, increase the degree to which learners transfer what they have learned to new settings and events. Educational innovations involving the use of portfolios usually imply a transfer from teacher-directed education with a strong focus on conveying knowledge, to education in which the development of students competency in the workplace is emphasized. In most cases, teachers are expected to invest more time and effort in coaching and assessment than they were used to almost inevitably, this change in roles and cause uncertainty and evoke resistance. Not only does it imply that teachers need to rethink key ideas, practices and values, but for many teachers it also means that they need to invest in developing new competencies for coaching and assessment[16].

f. Multisource feedback(MSF)

More commonly known as 360-degree assessment, this method represents a systematic collection of performance data and feedback for an individual trainee, using structured questionnaires completed by a number of stakeholders. The assessment are all based on directly observed behavior but they differ from the methods presented above in that they reflect routine performance , rather than performance during a specific patient encounter. Although there are a number of different ways of conducting this form of assessment, the mini assessment tool (mini PAT) that has been selected for use in the Foundation Programme in the UK is a good example. Trainees nominate assessor including senior consultant, junior specialists, nurses and allied health service professionals. Each of the nominated assessor receives a structured questionnaire which is completed and returned to a central location for processing. Trainees also complete self-assessments, using the same questionnaires, and submit these for processing. The categories of assessment include: good clinical care, maintain good clinical practice, teaching and training, relationship with patients, working with colleagues and an overall assessment. The questionnaires are collated and individual feedback is prepared for trainees. Data are provided in a graphic form which depicts the mean ratings of the assessors and the rational mean ratings of assessor and the national mean ratings. All comments are included verbatim, but they remain anonymous. Trainees review this feedback with their supervisor and together work on developing an action plan. This process is repeated twice yearly during the training period[17].

Providing Feedback

In the clinical environment it is vital to provide feedback to students/trainees as without providing adequate feedback their strengths can not be reinforced nor can their errors be corrected[18]. It is a crucial step in the acquisition of clinical skills, but clinical teachers either omit to give feedback altogether or the quality of their feedback does not enlighten the trainees of their strengths and weakness. The strength of Work-place based assessment lies in its direct observation and provision of effective-immediate feedback. The crucial factors that determine the effectiveness include the timing of feedback, environment of the settings, the method of giving feedback, the focus of feedback being on alterable behaviors, keeping confidentiality at every level and development of mutual trust. The assessor compares the trainee performance to standard (if possible) or expected norms based on own professional judgment. Various methods have been

described for providing effective feedback. The simplest of these is the "sandwich method" wherein criticism is delivered between layers of praise. Pendleton's framework is another common model in use. It requires the trainee to first state as to what went well followed by what could have been done better to improve the performance. Then the assessor provides the suggestions. This is sometimes criticized on account of being too rigid and more flexible modifications have been developed by educationists. One of the biggest hurdles to giving feedback is lack of direct observation of trainees by teachers. Clinical competence cannot be assessed by written examination, self report or third party observation, rather this needs to be observed directly by clinical teachers. Teachers are also very hesitant to provide negative feedback and frequently avoid it altogether although this can have adverse consequences on patient care. Trainees, on the other hand, may accept negative feedback as a personal attack. Teachers need to establish a positive learning environment in which errors are acknowledged and feedback is expected and accepted. Frequently, feedback is non-specific and unhelpful to learners, e,g. 'good job', " bad patient communication" etc[19].

Faculty training

The necessity of faculty members to hold specific skills and abilities with regard to technology has reached our institutions of higher education. All the faculty members including the junior trainers should undergo a formal training program at the own institute and also at central level. They should have also an orientation program on web site development, digital media, file structures, use LAN technology and file transfering . Course instructors should also be oriented by medical educationist so that effective training is to be ensured[20],[21].

Faculty development

There is a need to increase the frequency of observation of trainee performance in order to provide feedback aimed of improving the quality of the services they later render in clinical practice. To this end a number strategies have recently been implemented, but the studies of their efficacy are limited in number and they report variable success. Holmboe and colleagues examined the impact of a scoring sheet specifically designed to remind faculty both of the dimensions of feedback and that its main purpose is to provide trainees with information about their performance aimed at improving it. Usually trainees are informed about the introduction at a meeting held at the beginning of the training program of the faculty. Faculty members are allowed to run a trial training program and masters trainer's train them observably. Now it is clear that a number of strategies need to be employed to successfully implement an assessment process in which trainees receive feedback based on directly observed performance in the workplace. It is important that involvement of faculty in planning an in-course formative assessment strategy is likely to enhance their engagement in the process. Faculty need to be thoroughly briefed about the purpose and process of the observation and feedback strategy implemented. Students need to be properly informed about the purpose and format of the assessment method used. In particular it is critical that the potential learning benefits of the system are emphasized rather than the assessment aspects of the methods being used. Finally, faculty and students need to be regularly reminded of the benefits of formative assessment and the importance of keeping the assessment strategy active in the workplace[22].

Limitations of workshop-based assessment[23]

- In general, the current evidence suggest that WPBA is not sufficiently reliable to stand alone and that it should be used together with endpoint high stakes 'knows how' and 'shows how' assessment by learning.
- It is important to avoid the danger that assessment in workplace is seen as simply opportunities. . They need to be appropriately utilized by trainees and trainer/ assessor through dialogue and properly structured bearing plans.
- Low scores tend to be seen as failure by trainees rather than assessment for learning opportunities. We need to emphasize to both trainees and assessors that less than perfect scores should against the endpoint of that stage of training. Most WPBA forms are designed to assess against the endpoint of a particular stage of training, so it is essential that standard is explicit and clearly understand by trainee and assessor.

- Trainees and assessor must have a good understanding of the criteria against which judgement are being made; otherwise they might be less likely to make hard decisions in relation to the trainees future , assuming that others further down the line will make the more difficult decisions . Making negative judgement is culturally difficult for trainers unless support is in place for them as well as trainers. As we will indicate, making such judgement is made easier if agreed behavioral descriptions are available on which to analyze them. These descriptions need to be transparent to both trainees and assessors.

Conclusion:

Teachers are more likely to support and invest in educational changes if they acknowledge and subscribe to the educational value of the new learning approach, internalize and support the innovation, and are empowered to assume ownership of it. In curricula with a strong focus on the development and assessment of competencies a portfolio can be a valuable instrument. They have the potential to make learning visible on the Does level of Miller's pyramid, which describes independent performance in the workplace It require a new perspective on education from mentors and learners, many of whom are used to teacher-directed learning with a strong emphasis on the acquisition of knowledge, it also asks teachers and learners for significant investment of time and energy. The successful introduction of a portfolio in education also depends on how much time and energy learners are willing to invest in their portfolios. [24]

We conclude the guide for using portfolios for assessment and learning by referring to Spandel [25](1997) once more, who wrote" introducing portfolios are like buying shoes: the best choice depends on purpose and a really good fit happens over time, with lots of use and the right give and take by his user".

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