



“MOVON” AS A TOOL FOR UG FORMATIVE ASSESSMENT- A QUESTIONNAIRE BASED PILOT STUDY FROM NORTH EASTERN INDIA

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ARTICLE INFO

Article History:

Received 17th February, 2018

Received in revised form 4th

March, 2018

Accepted 20th April, 2018

Published online 28th May, 2018

ABSTRACT

“Orthopaedics”, where still lot of brain storming is going on in order to come to a consensus for a curriculum in orthopaedics for undergraduates in India. Assessment defines what students regard as important, how they spend their time and how they come to see themselves as students and then as graduates. If you want to change student learning then change the methods of assessment as mentioned by Brown in 1997 [1].

Key words:

Undergraduate medical education,
mock viva, formative assessment,
Orthopaedics

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INTRODUCTION

Viva is an important part of the assessment of learning in medical and allied health education programs. It provides unique insights into the capacity of the novice to think critically. When anxiety levels are high, assessment of knowledge, understanding, or capacity to think critically can be limited especially so when they are exposed to it during formal examination. There is a need, then, to consider how the viva can be used effectively as a tool of assessment. Often, it has been found that in the end the student performance is compromised in addition to other associated factors. As it is seen that even if the students have memorised the subject well, there is inability to analyse the question and answer which needs to be taught by conducting mock viva. Putting student into practice for such an exercise may help the student in invoking interest in orthopaedics at UG and thus motivation with better understanding and overcoming examination phobia at the same time. With this thought in mind, this pilot project on “MOVON- Mock Viva for Orthopaedics Neophyte” was undertaken to assess its role as a formative assessment and learning tool in the specialty of Orthopaedics

Aim

To study the effectiveness of “MOVON- Mock Viva for Orthopaedics Neophyte” as a educational value tool for

formative assessment and learning exercise amongst UG medical students following their exposure to subject of Orthopaedics.

Objectives

1. To determine the efficacy of “MOVON” to enhance the knowledge in the topics taught in Orthopaedics.
2. To assess the improvement in confidence and motivation by reinforcing the topic by personal teacher-learner interaction through feedback.
3. To assess the ability of “MOVON” to enable the student to identify and correct mistakes through on the spot feedback on the topic.
4. To enable the student to overcome Examination anxiety.

MATERIALS & METHODS

It was a Prospective descriptive qualitative study for the duration of 6 months conducted from October’2017 to March’2018 in the department of Orthopaedics at North Eastern Indira Gandhi regional Institute of Health & Medical Sciences (NEIGRIHMS), Shillong (India), a tertiary referral teaching institute in the north-eastern region of the country.

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50 MBBS students of 6th semester onwards were subjected to “MOVON” after the lecture/clinical teaching class on the topic covered in the class once the informed consent was taken and participants informed about the voluntary nature of participating in the study, about the aim of the study and that the data would be analyzed anonymously.

The students in the study were subjected to “MOVON session” for 10-15 minutes.

The student were given the handout of structured questionnaire (survey) to evaluate the “MOVON” on various parameter before and after the session.

Exclusion criteria

- MBBS students upto 5th semester as they are not exposed formally to the subject of Orthopaedics
 - Students who are not willing to be part of the study
- Pre-structured Questionnaire-

Name-

Gender-

1. Have you undergone Mock viva before- Yes (Y)/No (N), if yes subject _____
 Rate your experience about the following in relation to MOVON- SCORING (Before and After)

2. Ability to answers questions on the topic- Unsatisfactory (1)
 Satisfactory (2)
 Good (3)
 Very good (4)

3. Understanding of the topic- Unsatisfactory (1)
 Satisfactory (2)
 Good (3)
 Very good (4)

4. Preparation for the exam.- Unsatisfactory (1)
 Satisfactory (2)
 Good (3)
 Very good (4)

5. Confidence to face the exam.- Unsatisfactory (1)
 Satisfactory (2)
 Good (3)
 Very good (4)

6. Examination anxiety- Unsatisfactory (1)
 Satisfactory (2)
 Good (3)
 Very good (4)

7. Motivation to study Orthopaedics- Unsatisfactory (1)
 Satisfactory (2)
 Good (3)
 Very good (4)

8. Perception of relevance to the topic taught- Unsatisfactory (1)
 Satisfactory (2)
 Good (3)
 Very good (4)

9. Whether you wish MOVON to be introduced on a regular basis in the teaching Yes (Y) / No (N),
 Why _____
 How can it be improved ? _____
 Suggestions (if any) _____

Data collection method – A total of 50 students were considered in this project. 25 belonged to the 9th semester and 25 belonged to the 6th semester MBBS. After teaching a topic, the students were subjected to a mock viva.

Change in Scoring as were evaluated by comparison of scores before and after the “MOVON” (Pre & Post data set) – as feedback from the learner (Survey based on pre-structured questionnaire).

50 such questionnaires were evaluated.

RESULTS

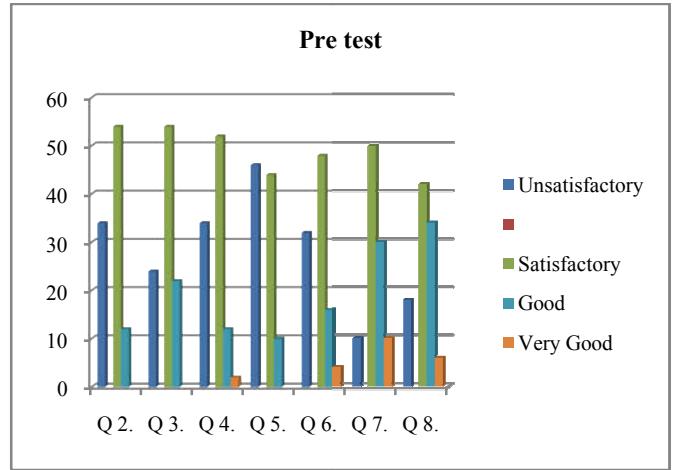


Table 1 Graphical representation of Pretest Scores (Before MOVON)

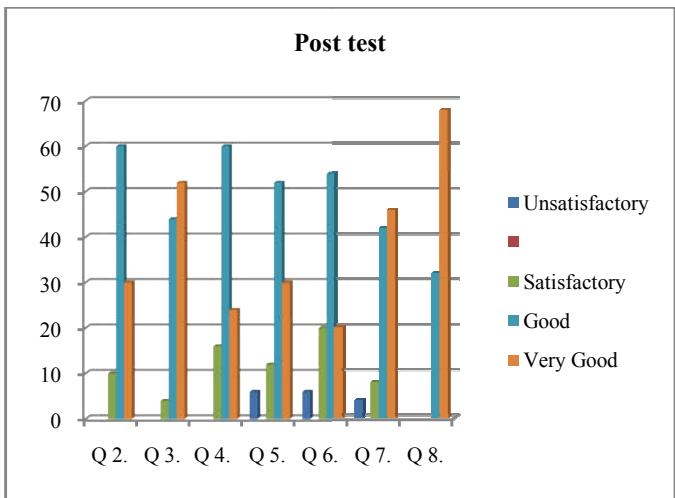


Table 2 Graphical representation of Post test Scores (After MOVON)

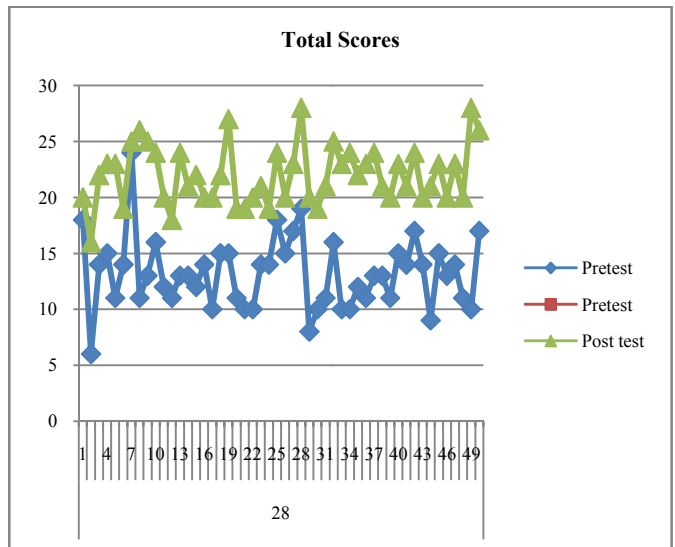


Table 3 Comparison of Pre and Post test Scores (MOVON)

Statistical analysis was undertaken through relevant statistical tools (R tool) and using Paired t-test as the pre & post data sets were non normally distributed continuous data.

Method used was Paired t-test and the analysis was conducted using R tool of statistics.

t = -20.519, df = 49, p-value < 2.2e-16

Mean of the differences: -8.84

Standard Two Tails T Distribution values:

df	$\alpha=0.2$	$\alpha=0.1$	$\alpha=0.05$	$\alpha=0.02$	$\alpha=0.01$	$\alpha=0.002$
30	1.310	1.697	2.042	2.457	2.750	3.385
60	1.296	1.671	2.000	2.390	2.660	3.232

The p-value is lesser than all above alpha value (0.002, 0.01, 0.02, 0.05, 0.1 and 0.2) then we can reject the null (H₀) hypothesis. In conclusion, the post training with “MOVON” has made significant improvement in the learning to the students.

DISCUSSION

There has been in many universities a drive towards encouraging students to become more independent learners, to encourage students to take on a more active role within learning (Leathwood 2006)[2]. Adopting a deep approach to learning can shift responsibility for learning from the institution to the student, with the student taking control of their learning (Rust 1998:71)[3]. It has been shown that in order to facilitate this situation students need to adopt a more critical and questioning stance to their studies in order to adopt a more reflective deeper approach to learning (James 2000)[4]. Deep and surface learning originated in the 1970s and identified two different levels of processing knowledge. Those students who used surface-level processing focused on the text itself, memorising as much as possible while those who utilise a deep-level approach were aiming to understand the underlying meaning of that text (Case and Marshall 2004)[5]. Introducing viva as a method of formative assessment and reflective learning tool can serve this very purpose of medical education. Use of the viva is an important part of the assessment of learning in medical and allied health education programs [6, 8], viva known to provide unique insights into the capacity of the novice to think critically [7, 9, 10]. When anxiety levels are high, assessment of knowledge, understanding, or capacity to think critically can be limited [9]. There is a need, then, to consider how the viva can be used effectively as a tool of assessment both summative and formative. Perhaps what is most important for those involved in the conduct of the viva, or examination by viva, is preparation [12]. Indeed, many commentators suggest that raised anxiety levels related to vivas can be reduced by preparing novices through careful preparation, including involvement in mock vivas and role plays [13, 14]. With the last decade being appointed the bone and joint decade [15], undergraduate musculoskeletal education, particularly Trauma & Orthopaedic surgery, is in need of optimisation. It is also undeniable that in order to improve curriculum assessment, students' perception of learning opportunities and attitudes towards learning subjects must be considered.

A mock viva was devised pertaining to the topics which the students is required to know, thus to enable MBBS students in their ongoing curriculum in orthopaedics to demonstrate both the art and science of medical practice. Rust (2002) [16] calls for students to be afforded opportunities for regular formative feedback; therefore, this “MOVON” can be undertaken as a formative assessment tool prior to their undergoing summative assessment.

In our study, its efficacy has been evaluated and it has been found to significantly enhance the learning and check levels of anxiety of the students through the feedback and it is found to be statistically significant with regard to topics in Orthopaedics, being covered in the curriculum for MBBS undergraduates here at this center in the north-eastern part of

India. This formative tool may encourage assessment for learning and is an approach which is suggested to discourage surface learning (Rust, 2002). A holistic rubric was developed in an attempt to capture the students' abilities against the six cognitive operators or heuristics suggested by Banning (2008)[17]. Open-ended questions were devised to be asked of the students as advocated by Levett-Jones *et al.* (2011) [18], to uncover the student's cognitive abilities, integration of knowledge, complex problem solving, critical opinion, lateral thinking and innovative action. Roberts (2011)[19] Self-assessments are the most widely used approaches for capturing students' noncognitive characteristics. Most insights concerning the relationship between noncognitive qualities and educational or work-related outcomes stem from research conducted with questionnaires. Self-assessments usually ask individuals to describe themselves by answering a series of standardized questions. The answer format is usually a Likert-type rating scale (for example, in a range from Strongly Disagree to Strongly Agree)[20] but other formats may also be used (such as Yes-No or open answer). In our study, we also undertook four categories viz. Unsatisfactory (1), Satisfactory (2), Good (3), Very good (4) quite similar to the likert scale in the pre-structured questionnaire designed for feedback from the students undergoing “MOVON”. Mock viva is not only a tool for the teacher to understand students learning and be a part of formative assessment, but it also help students develop insight & application of the knowledge given in a lecture, when they are subjected to a question answer session. Personal interaction with a teacher is a rehearsal for the summative assessment and can help reduce their anxiety. The pre and post test tool results help us analyse students perception of the benefits of mock viva, which can be undertaken on regular basis before and after the teaching in the form of such easy to perceive students feedbacks.

CONCLUSION

Assessment is at the heart of the student experience. (Brown and Knight, 1994)[21]. From our students' point of view, assessment always defines the actual curriculum. (Ramsden, 1992)[22]. This pilot project undertaken as “MOVON” calls for new and innovative ways of assessing student learning which bridges the artificial divide between theory and practice and enables students to demonstrate both the art and science of medical practice. The clinical viva has the potential to be one such mechanism. This kind of integration of learning in universities and practice settings is important to developing the quality of summative assessment. However, evaluation of knowledge with a large number of students is a great organisational challenge *with students expressions like- Compared to writing things it is more difficult because you have to be very sure of what you are saying because once you have said it, it is all done or I was looking at it from a different perspective but when the questions were put to me it was like 'OK. I can do it that way, that I should look at it because I knew the right things but I was not putting them in the correct places.* More elaborate feedbacks encompassing the various domains of learning pertaining to the subject being taught may help us to design such assessment methodologies.

References

1. Brown G, Joanna Bull, Malcolm Pendlebury. Assessing Student Learning in Higher Education. Psychology Press, 1997 ISBN- 0415162262,9780415162265

2. Leathwood C. 'Gender, Equity and the Discourse of the Independent Learner in Higher Education' Higher Education 2006; 52: pp 611-633
3. Rust C ed. Improving Student Learning: Improving Students as Learners, The Oxford Centre for Staff and Learning 1998
4. James D. 'Making the graduate: perspectives on student experience of assessment in higher education' chapter in Filer A ed. Assessment: social practice and social product Routledge London Development, Oxford 2000
5. Case J and Marshall D. 'Between deep and surface: procedural approaches to learning in engineering education contexts' Studies in Higher Education 2004; 29:5 : pp605-615
6. Flexner A. Medical education in the United States and Canada. A report of the Carnegie foundation for that advancement of teaching 2010. Boston, Merrymount Press.
7. Williams SC, Gulihar A, Dias JJ, Harper WM. A new musculoskeletal curriculum: has it made a difference? *J Bone Joint Surg Br* 2010. 92(1); 7-11.
8. Lewington K. Changes to medical student education over the past 20 years. *Student BMJ*. 2012; 20:e3504.
9. Elzubeir M, Rizk D. Evaluating the quality of teaching in medical education: are we using the evidence for both formative and summative purposes? *Med Teacher* 2002; 24:313-319. doi: 10.1080/01421590220134169.
10. Carter B. Whittaker K. Examining the British PhD viva: opening new doors or scarring for life? *Contemp. Nurse*. 2009; 32:169-178.
11. Orrock P, Grace S, Vaughn B, Coutts R. Developing a viva exam to assess clinical reasoning in pre-registration osteopathy students. *BMC Med. Educ*. 2014; 14:193.
12. Knight R, Dipper L, Cruice M. The use of video in addressing anxiety prior to viva voce exams. *Br. J. Educ. Technol*. 2013; 44:E217-E219.
13. Naqvi A. Aheed B. Introducing an innovative viva format for assessment of integrated knowledge. *J. Pakistan Med Assoc*. 2014; 64: 823-825.
14. McAdams C. Robertson D. An informed look at doctoral vivas (oral examinations) in the preparation of counselor educators. *Counselor Educat Superv* 2012; 51:176-188.
15. Selzer R, Ellen S, Rotstein L, Roseby R. Twelve tips for performing well in vivas. *Med. Teach*. 2014:1-5. doi: 10.3109/0142159X.2014.959909.
16. Chris Rust. The Impact of Assessment on Student Learning: How Can the Research Literature Practically Help to Inform the Development of Departmental Assessment Strategies and Learner-Centred Assessment Practices? *Active Learning in Higher Education* 2002 3: 145 DOI: 10.1177/1469787402003002004
17. Banning, M. (2008), A review of clinical decision making: models and current research. *Journal of Clinical Nursing*, 17: 187-195. doi:10.1111/j.1365-2702.2006.01791.x
18. Tracy Levett-Jones, Jean Gersbach, Carol Arthur, Jan Roche. Implementing a clinical competency assessment model that promotes critical reflection and ensures nursing graduates' readiness for professional practice. *Nurse Education in Practice* 11 (2011); 64-69
19. Roberts D The clinical viva: an assessment of clinical thinking. *Nurse Educ Today*. 2013Apr; 33(4):402-6. doi: 10.1016/j.nedt.2013.01.014. Epub 2013 Feb 18.
20. Likert, Rensis. "A Technique for the Measurement of Attitudes." *Archives of Psychology* 140 (1932): 1-55.
21. Brown, S. & Knight, P. (1994) *Assessing Learners in Higher Education*, London: Kogan Page.
22. Ramsden, P. (1992). *Learning to Teach in Higher Education*. London: Routledge.

How to cite this article:

Sharat Agarwal *et al* (2018) "Movon" As A Tool For UG Formative Assessment- A Questionnaire Based Pilot Study From North Eastern India', *International Journal of Current Medical And Pharmaceutical Research*, 04(5), pp. 3272-3275.
