

Original Article

Continuum of medical education: Objectivity in instructional method, learning and assessment

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Abstract

Objective: To find the effect of objectivity practiced during instruction and assessment on learning.

Method: Fifty first year BDS students of Islamic International dental college, Islamabad were selected for a descriptive case series study extending from January to mid February 2007. Before starting the haematology module, specific learning objectives were defined. Interactive student centered instructional method was adopted in the form of interactive lectures and small group discussions. Assessment tool selected for measuring predefined objectives were to choose one best and the correct statement MCQS. Students were informed of the assessment pattern and practiced. Out of 65 test items 58 required a correct choice while 7 MCQS were objectively structured with "choose one best answer," mixed in the main test pool and marked with an asterisk.

Result: Evaluation survey showed dissatisfaction regarding the traditional lecture system. Although students were satisfied with the learning environment but majority disagreed with the reliability and validity of the current assessment method. After introducing the reforms in the instructional method and assessment pattern, the level of student satisfaction became high and their feedback was positive regarding the learning experience. The qualifying criteria for the 50 students was achieving 50% in both type of MCQS. In objectively structured choose one best type, 80% of the students scored more than 50% marks (i.e. 4 out of 7). In choose the correct statement, 96% of the students scored more than 50% marks (i.e. 29 out of 58). Final scoring for 65 test items showed that 96% of the students scored more than 50% marks.

Conclusion: Introducing objectivity in instruction, learning and assessment gives good outcome in medical education. Learners groomed in such an environment are critical thinkers as evidenced by test results of, objectively structured choose one best type MCQS (JPMA 60:262; 2010).

Introduction

In this era of globalization where we see a lot of reforms taking place in almost every field of life, medical education is no exception. Being members of the medical educator's community, in due course of time we have moved from pedagogical instructional method to andragogical model. In this the adult learner is the focus of attention. If this self-directed learner passes through the continuum of medical education with objectivity practiced at each and every step, the outcome is a caring, skillful, community oriented life long learner. The idea of objectivity in teaching, learning, and assessment is the key to success in medical education. It helps to provide a focus for instruction, communicate expectations to learners, and help design the test items so as to measure the specified learning objectives.

"Objectivity is a method of acquiring knowledge by reasoning. It is solely based on the facts of reality and is in accordance with the laws of logic," Diana Mertz Hsieh.¹ In medical education this objectivity works in two ways i.e., it helps to develop rationale thinking and a realistic approach among the learners. All worthwhile educational experiences are initially driven by objectives.²⁻⁴

Objectivity provides a platform for learning sets targets for assessment and help to communicate expectations to learners. In instruction it provide a focus, acts as a guideline to design course content and helps to convey instructional intent to learners.² In assessment this objectivity helps to determine whether the learning objectives, set as a priority, are met or not.

In the current traditional educational system more emphasis is on rote memory as the teacher is the sole provider of knowledge while the student is a passive receiver. Instructions without setting of objectives lead to learning that lack relevance. Assessment done in such a state is not valid and reliable as it is not based on objectives and test items are not prepared with broad sampling across the content area. In this rather bleak scenario, assessment instead of driving learning is only a way to judge the factual knowledge.

In the current system learning sessions are driven without any objectives and assessment tools applied are without any objectivity and lack validity and reliability. Need assessment has to be done in the form of questionnaire regarding learning in traditional lectures. Assessment system In contrast to personal learning, needs educational assessment. It helps to identify the discrepancy or gap analysis in which current practice behaviour is compared with an ideal or accepted standard of practice.⁵ Educational need identification of our major stakeholder i.e. students led us to design this study in order to find the effect of objectivity practiced during instruction and assessment on learning.

Subjects and Methods

Level of students in this study was first year BDS from Islamic International dental college Islamabad. Fifty students both male and female were included in the study. The area of interest was Physiology with the focus of study being the Haematology module. This module spanned over five weeks, with fifteen interactive lecture sessions and five small group discussion sessions.

The study was conducted to see how objectivity helps to acquire knowledge by reasoning and was practiced at three levels. The strategy followed was:

At Level-I: A 5 point Likert scale evaluation survey questionnaire was designed.⁶ Feedback from students regarding current system of instructional method, learning and assessment was taken. From students feedback the areas that needed reforms were identified and a blueprint based on objectivity for instruction, learning experience and assessment was developed.

At Level-II: Reforms were done in the areas of instructional method, learning experience and assessment. The learning objectives were discussed with the students As far as instructional method was concerned interactive student centered lectures replaced the teacher centered conventional lectures.⁷ Along with lectures small group discussions in which problem oriented learning were started.

To enhance learning experience students were exposed to case scenarios to develop critical thinking and communication skills. For personal development they were involved in presentations and assignments.

Regarding assessment they were informed that it would be across the content area with broad sampling. The assessment pattern already practiced was to "choose the correct statement type MCQS." They were informed that along with "choose the correct statement;" "choose one best type" multiple choice questions would also be included in the assessment. As "choose one best type" pattern was new for the students, they were made to practice for these test items. Reasons for including "choose one best type" MCQS was to reduce the risk of cueing and guessing and secondly critical thinking is better judged by best type MCQS.

At Level-III: Sixty five objectively structured test items were designed on the guidelines provided by College of Physicians and Surgeons, Pakistan. Fifty eight test items were of "choose the correct statement" type and 7 test items were of "choose one best type" MCQS. These 7 MCQS were marked with asterisk and mixed in the main test pool. Marking was done separately for both types of MCQS. Final scoring included marks of both types.

A 5 point Likert scale reflection survey questionnaire was designed to get a feed back from the students regarding

the whole process.

Results

Level-I evaluation survey questionnaire results are shown in Table-1. At level II, the process of educational reforms done in instructional method in the form of interactive lectures and small group discussion were evaluated by

Table 1: Evaluation survey feedback.

	Strongly agree	agree	neutral	disagree	strongly disagree
Current instructional model acceptability	04	07	02	19	18
Learning environment favours applied knowledge	39	10	--	01	--
Current system of assessment is reliable & valid.	--	03	01	09	37

Table 2: Reflection survey feedback.

	Strongly agree	agree	neutral	disagree	strongly disagree
Instructional method interactive & student centered	38	09	03	--	--
Learning objectives enhanced learning	43	03	--	--	--
Assessment matched predefined learning objectives	47	03	--	--	--

continuous formative assessment.

The study results of level III were acquired by conducting end of module assessment (Table-2).

In 7 "choose one best type" MCQS, the criteria for passing was 50% (a score of 4 out of 7). Of the 50 students, 80% scored more than 50% marks. In 58 "choose the correct statement" type MCQS the criteria for passing was also 50% (a score of 29 out of 58). Of the 50 students, 96% scored more than 50% marks. In final scoring of 65 MCQS, the criteria set for passing was 50% (a score of 33 out of 65). Of the 50 students, 96% scored more than 50% marks.

Discussion

In this study different phases of learning were evaluated at the same time by getting feedback from the targeted learners. The consensus was that the present system of instruction, learning experience and assessment, all needed reform. The students participated in the whole process and they were involved at each and every step. They enjoyed the new mode of instruction and learning experience. They were very satisfied with the assessment pattern. In the present study our emphasis was on looking at the effect of objective based instruction and assessment on students learning. This when compared to a study by Danish and Awan⁸ the learning styles were matched with the instructional model and then the impact on learning was seen.

This was in contrast to a study by Oyebola et al⁹ in which they assessed the student's performance by MCQ and short essay questions, our study has shown the effectiveness of "choose one best type" MCQ compared to "choose the correct statement" MCQ. The pattern of choosing one best type MCQS was acceptable for the students and they consider these a good approach in the development of

critical thinking.

Conclusion

Assessment is closely linked to learning objectives which are tied to instructor's philosophy of teaching and learning. Assessment tool selected should be able to measure the stated learning objectives and be consistent with course activities and resources. Introducing objectivity in instructional method, learning experiences and assessment gives good outcome in medical education. It also helps in the development of critical thinking and a realistic approach in the adult self directed learner.

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