

## **Multi-Source Feedback (360 Degree Feedback) for Assessing Non - Scholastic Abilities**

*Dr.Santosh Kumar, Professor and Head of Departments of Urology and Medical Education and Mr.Z.Zayapragassarazan, Assistant Professor of Education Technology, Department of Medical Education, JIPMER, Puducherry.*

### **What is Feedback ?**

Feedback is defined as “the modification or control of a process or system by its results or effects.”<sup>1</sup> Feedback also denotes “information given in response to a product, a person’s performance of a task, etc., used as a basis for improvement.”<sup>1</sup> The phenomenon of feedback naturally occurs in biological systems including human beings. For example, testosterone secreted by Leydig cells of the testis acts on the anterior pituitary and inhibits the secretion of luteinizing hormone from it and acts on the hypothalamus and inhibits the secretion of gonadotropin releasing hormone thus regulating its own secretion.

Feedback is used in industry and business for improving employee’s performance. Feedback is also used for improving student’s performance in medical education. Feedback can be reinforcing when learning is correct and it can be corrective when learning is incorrect.

### **What is Traditional Feedback ?**

The traditional feedback is one-source feedback. In industry and business, data on performance are obtained from the immediate supervisor and given to the employee. In medical education, data on performance are obtained from the teacher and given to the student.

### **What is Multi-Source Feedback (360 Degree Feedback) ?**

In Multi-Source Feedback or 360 Degree Feedback, data on the performance of an individual are collected systematically from a number of stakeholders and are used for improving performance.<sup>2</sup> In medical education, following stakeholders can be used for collection of data on the performance of a undergraduate or postgraduate student.

#### **1. Teachers**

The data on performance of a student are collected from teachers. It is the commonest source used. The feedback from teachers may be the most useful feedback.

#### **2. Allied Health Professionals**

The data on performance of a student are collected from various allied health professionals (laboratory technicians, X-ray technicians, operation theatre technicians, pharmacists, medicosocial workers, etc) who work with the student.

#### **3. Nurses**

Nurses in medical laboratories, inpatient services, outpatient services and operation theatre services can provide performance data on individual students. These nurses assist the students and are in a position to provide data on the performance of students.

#### **4. Administrative and Supportive Staff**

The data on performance of a student are obtained from administrative and supportive staff who often interact with the student.

#### **5. Patients and Relatives**

The data on performance of a student may be collected from patients and relatives who interact with the student.

#### **6. Peers**

Peers or other students of the same group may also provide performance data of a student.

#### **7. Self-Feedback**

Data on performance may also be collected from the student about his/her performance.

### **What is the Use of Multi-Source Feedback (360 Degree Feedback) ?**

Multi-Source Feedback (360 Degree Feedback) is a method of assessing various communication and interpersonal skills.<sup>3</sup> Four groups of raters (doctors, allied health professionals, nurses and clerical/secretarial staff) are used by Royal Colleges of Physicians for rating specialist registrars and each group provides four raters.<sup>4</sup> These raters work with the assessee and provide structured feedback on the individual's performance.

### **What are Non-Scholastic Abilities ?**

The word scholastic means "of or concerning schools and education."<sup>1</sup> Thus the word non-scholastic can be taken to mean "not of or concerning schools and education." Hence non-scholastic abilities may be defined as those abilities which are not traditionally taught and assessed in schools.

In general education, following learning outcomes have been described.<sup>5</sup>

- 1.Knowledge
- 2.Comprehension
- 3.Application
- 4.Analysis
- 5.Synthesis
- 6.Evaluation
- 7.Drawing and sketching skills
- 8.Ability to handle instruments
- 9.Communication skills (skills in writing and talking)
- 10.Social skills (team work and leadership)
- 11.Personal qualities (regularity, hard work, inventiveness, originality and initiative)
- 12.Interest
- 13.Positive and scientific attitude
- 14.Appreciation
- 15.Creativity

In the above list, outcomes 9 to 15 can be termed non-scholastic abilities.

### **What are Non-Scholastic Abilities for Postgraduate Medical Students ?**

Accreditation Council for Graduate Medical Education (ACGME), USA, has identified following six domains of competencies.<sup>6</sup>

- 1.Patient Care
- 2.Medical Knowledge
- 3.Practice-Based Learning and Improvement
- 4.Interpersonal and Communication Skills
- 5.Professionalism
- 6.Systems-Based Practice

In this list, interpersonal and communication skills and professionalism obviously come under non-scholastic skills.

Following non-scholastic abilities were identified for an MCh (Urology) curriculum.<sup>7</sup>

- 1.Regularity (ward rounds, seminars, journal clubs)
- 2.Innovative ability and creativity in problem solving
- 3.Decision making
- 4.Initiative
- 5.Interpersonal skills
- 6.Attitudes
- 7.Moral values
- 8.Leadership qualities
- 9.Organizational abilities.

### **What are Non-Scholastic Abilities for Undergraduate Medical Students ?**

The Medical Council of India includes several non-scholastic abilities in its Regulations on Graduate Medical Education under Institutional Goals which are cited below.<sup>8</sup>

"At the end of the undergraduate program, the medical students shall be able to :

(d) appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patient in discharging one's professional responsibilities.

(e) possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine.

g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery.

i) be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

(j) be competent to work in a variety of health care settings.

(k) have personal characteristics and attitudes required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals."

General Medical Council, UK, lists following curricular outcomes for medical students in the document, Tomorrow's Doctors.<sup>9</sup>

1. Good clinical care
2. Maintaining good medical practice
3. Relationship with patients
4. Working with colleagues
5. Teaching and training
6. Probity
7. Health

The outcomes of good clinical care, relationship with patients, working with colleagues and probity obviously include non-scholastic abilities. The section on curricular outcomes of the document, Tomorrow's Doctors, also says that the principles of professional practice set out in Good Medical Practice must form the basis of medical education.<sup>10</sup> The principles of Good Medical Practice come under four groups listed below.

1. Good clinical care
2. Working with colleagues
3. Probity
4. Health

### **Assessment of Non-Scholastic Abilities in Medical Education by Multi-Source Feedback**

As an example, Multi-Source Feedback or 360 Degree Assessment has been used for assessing residents' competency in interpersonal and communication skills.<sup>3</sup> Interpersonal and communication skills were thought to be essential for the development of other competencies such as professionalism, patient care and systems-based practice. Assessment of interpersonal and communication skills involved assessment of listening skills, ability to communicate through the spoken word and ability to demonstrate humanistic qualities. Ten-item questionnaire was used and the scoring scale was 1 to 5. The performance data were obtained from faculty members, nurses, allied health professional staff, medical students, patients, fellow residents and self assessment. The data were kept confidential.

As another example, Multi-Source Feedback or 360 Degree Assessment was used for assessing senior house officer's interpersonal behaviour.<sup>11</sup> Following four domains, which represent key interpersonal and behavioural elements from Good Medical Practice of General Medical Council, UK, were used and each domain was rated on a three-point scale.

1. Maintaining trust / professional relations with patients
2. Verbal communication skills
3. Teamworking and working with colleagues
4. Accessibility

The trainees themselves chose at least 10 assessors. Five assessors had to be nurses, three had to be other doctors and two could be other

health care team members.

The Medical Council of India recommends the assessment of following non-scholastic abilities during internship.<sup>8</sup>

1. Responsibility, punctuality, work up of case, involvement in treatment and follow-up reports.
2. Capacity to work in a team (behaviour with colleagues, nursing staff and relationship with paramedicals).
3. Initiative, participation in discussions and research aptitude.

Following 0 to 5 scoring scale is recommended for assessing above listed non-scholastic abilities.

Poor	0
Fair	1
Below average	2
Average	3
Above average	4
Excellent	5

The assessment method for non-scholastic abilities recommended by the Medical Council of India can be used as Multi-Source Feedback or 360 Degree Feedback by obtaining feedback from doctors, nurses, allied health professionals and supportive staff.

### References

1. Concise Oxford English Dictionary. Soanes C, Stevenson A, eds, Eleventh Edition, Oxford : Oxford University Press, 2004.
2. Epstein RM, Assessment in medical education. N Engl J Med 2007;356(4):387-396.
3. Joshi R, Ling FW, Jaeger J. Assessment of a 360-degree instrument to evaluate residents' competency in interpersonal and communication skills. Acad Med 2004; 79(5) : 458-463.
4. General information about methods. Royal Colleges of Physicians, 2005.

5. Monograph on Internal Assessment for Universities. New Delhi : Association of Indian Universities.

6. Outcome Project of Accreditation Council for Graduate Medical Education (ACGME), USA, (Accessed September 27, 2010 at <http://www.acgme.org>).

7. Tandon SP, et al. Assessment of non-scholastic abilities in MCh (Urology) curriculum. Ind J Urol 1985;2:26-32.

8. Regulations on Graduate Medical Education, 1997, Medical Council of India.

9. Tomorrow's Doctors, General Medical Council, UK, 2003 (Accessed March 3, 2008, at <http://www.gmc-uk.org>).

10. Good Medical Practice: The Duties of a Doctor Registered with the General Medical Council. Med Edu 2001;35(suppl.1):70-78.

11. Whitehouse A, Hassell A, Bullock A, Wood L, Wall D. 360 degree assessment (multisource feedback) of UK trainee doctors: Field testing of team assessment behaviours (TAB). Medical Teacher 2007; 29:171-176.

\*\*\*\*\*

## Role of Educational Psychology in the Preparation and Professionalisation of Medical Teachers

*Mr. Z. Zayapragassarazan, Assistant Professor of Educational Technology, Department of Medical Education and Dr. Santosh Kumar, Professor and Head of Departments of Urology and Medical Education, JIPMER, Puducherry.*

In this age of science and technology, psychology has been considered as one of the youngest, yet one of the most influential sciences. It has influenced education in many different ways and has given a new turn; a psychological turn to the human mind. For a skillful teacher in this age, a

great deal of knowledge of educational psychology is highly indispensable.

The basic difference between Psychology and Educational Psychology appears to be the matter of focus. General psychology gives a comprehensive view of human behaviour. Educational psychology is nothing but one of the branches of applied psychology. It is an attempt to apply knowledge of pure psychology to the field of education. It consists of application of psychological principles and techniques to human behaviour in educational situations. Educational psychology highlights the behaviour of the learner. Learner, learning processes and learning environment are the three focal areas of educational psychology. <sup>1</sup>

The learner has the most important place in the classroom. One important factor that the teacher should know about the learner is that there are individual differences among learners. There are gifted, average and slow learners in the class. The class is generally not homogeneous but heterogeneous. The next area is learning process. An effective learning process is one where the instruction is individualized. The student's perception, thinking, reasoning, intelligence, remembering - all come under learning process. The third area is the learning situation that includes the conditions like physical factors, the nature of the class, attitude and behaviour of the teacher, etc. In short, we call this as classroom climate. Generally there is diversity in the classroom and Educational Psychology aims to prepare the teacher to realize the individual differences among his students and plan accordingly to maximize the achievement of each individual learner entrusted to his/her care. <sup>2</sup>

Educational Psychology helps teachers of higher education in the following ways:

### **To understand the developmental characteristics of students**

To be a successful doctor one must have the required professional knowledge and skills as well as the knowledge about the nature of the patient whom he wants to treat. In the same way, if one wants to be a successful teacher, he must know about the science of behaviour of learners. Being adolescents medical students at the entry stage have their own characteristics. If the prospective medical teacher knows these characteristics he can utilize them in imparting instruction and moulding their behaviour according to the specified goal of medical education. Educational psychology studies individual differences and suggests ways and means to provide education to all types of learners. No two individuals are alike. Individuals differ physically and psychologically. Individual differences are caused due to differences in capacities and capabilities, potentialities and propensities, abilities and intelligence, attitudes and aptitudes, interests and sentiments, temperaments and traits, age and sex etc. It must be noted that individual differences are mainly caused by heredity and environment. Hence educational psychology studies all these areas. The understanding about the individual differences will help the teachers to adjust their teaching to the needs and the requirements of the class which has a great range of individual differences. <sup>2</sup>

### **To understand the nature of classroom learning and effective teaching methods**

To instruct effectively in the class, the teacher must understand the principles of learning and various approaches to the learning process, problems of learning and their remedial measures. It also gives the knowledge of various approaches to understand the learning process, factors affecting and guidance for effective learning. Classroom teaching is not dependent on any one theory. It is related and uses several theories of teaching-learning. The teacher must be acquainted with knowledge of various theories in order to organize

his classroom teaching. Educational psychology provides us with the knowledge of different approaches evolved to tackle the problems of teaching at different levels.<sup>3,4</sup>

### **Curriculum construction**

Psychological principles are used in formulating curriculum for different stages.<sup>4</sup> Needs of the learners, their developmental characteristics, learning pattern and needs of the society, all these are to be incorporated in the curriculum using the psychological principles of teaching and learning.

### **Measurement of learning outcomes**

Measurement and evaluation is another important field of educational psychology. It gives new techniques and tests for measuring intelligence, personality, aptitudes, interests and achievements etc. Psychological tools help the teacher to assess the learning outcomes of the students. He can also evaluate his teaching methods and in the light of the performance of his students can modify his strategy of teaching.<sup>3</sup>

### **Knowledge of mental health**

Mental health of the teacher and the taught is very important for efficient learning. The teacher from the study of psychology can know the various factors which are responsible for the mental ill-health and maladjustment. He can prevent maladjustment in students provided he is equipped with the fundamental knowledge of mental health and hygiene.<sup>1</sup>

### **Use of AV aids**

Teaching with the use of aids that affect multiple senses of the learner is more effective and lasting. Thus the modern teachers resort to the use of hardware and software approaches by adopting the principles of educational psychology to make their teaching more concrete and stable. Educational psychology helps the teachers in the

preparation of audio-visual aids by incorporating the appropriate psychological attributes selecting the appropriate teaching aids.<sup>5</sup>

### **Behavioural problems**

Education psychology studies the behaviour of the learner in learning situations. It studies the psychological as well as the physiological behaviour of the learner.<sup>4</sup> Psychological basis of behaviour are instincts, emotions, sentiments, suggestion, sympathy, imitation and play etc. behaviour also has physiological determinants. Educational psychology studies all these psychological basis of behaviour seen among students.

### **Guidance and counselling**

It is only after successful study of educational psychology that a teacher can discharge his duties successfully. The teacher has to guide and counsel the students at every stage. Rousseau was of the opinion that "an individual is like a book whose every page has to be studied by the teacher". The impact of the saying is that the teacher should give educational and psychological guidance and counselling to the students.<sup>6</sup> Knowledge of educational psychology also helps a teacher in the guidance for the education of the exceptional learners and also helps students develop positive attitude towards their subject and profession.

### **Group Dynamics and group behaviour**

Educational psychology studies group dynamics and group behaviour in classroom teaching learning. It studies the importance and effect of group on the individual. It also considers how an individual can modify the group life. It emphasizes the role of groups in the education of students. It is on this basis that now in the school, the formation of healthy groups and providing of a

healthy environment is considered most desirable and essential.<sup>6</sup>

### Research

Educational psychology deals with the latest techniques of experimentation and research. We can control, direct and predict the behaviour of students on the basis of research studies in classroom teaching. Teachers can take up action research which they can easily carry out for their personal satisfaction and immediate solution for their difficulties.<sup>7</sup> Problem based learning, case based learning and Objective Structured Clinical/ Practical Examination (OSCE/OSPE) and several other innovative ideas resulting from research studies in educational psychology have been introduced to improve the teaching-learning process.

Undoubtedly the study of educational psychology may be very helpful to equip our prospective medical teachers with necessary skills to deal with classroom teaching-learning problems. Summing up we can say in the words of W.B. Kolesnik, that “the purpose of educational psychology is not to give specific, definitive answers to questions about methods of teaching or techniques of dealing with students, not to arm the teachers in advance with pre-packaged solutions to the many practical problems that he is likely to encounter in the classroom. Its purpose, rather, is to introduce him to psychological theories and research findings about learners and the learning process and to a method of thinking psychologically, that may help him answer his own questions, reach his own conclusions and solve his own problems”.<sup>3</sup>

### References

1. Dandapani S. A text book of advanced educational psychology. 4<sup>th</sup> ed. New Delhi: Anmol; 2010.

2. Mangal SK. Advanced educational psychology. 2<sup>nd</sup> ed. New Delhi: Prentice Hall India; 2007.
3. Raina MK, Srivastava AK. Educational psychology in India: Its present status and future concerns. Intl J Group Tensions. 1997; 27(4): 309-340.
4. Anderson J. Training of Medical Teachers. The Lancet. 1974; 304(7880): 566-568.
5. Van Merriënboer JJG, Sweller J. Cognitive load theory in health professional education: design principles and strategies. Med Educ 2010; 44:85–93.
6. Schmidt HG, Boshuizen HP. On acquiring expertise in medicine. Special issue: European Educational Psychology. Educ Psychol Rev 1993; 5 (3):205–21.
7. Chi MTH, Glaser R, Rees E. Expertise in problem solving. In: Sternberg RJ, ed. Advances in the Psychology of Human Intelligence. Hillsdale, NJ: Lawrence Erlbaum Associates 1982;7–76.

\*\*\*\*\*

## Assessment of lecture by feedback from undergraduate students

*Dr. Padmalatha K, Assistant Professor, Department of Anatomy Dr.B.R.Ambedkar Medical College, Bengaluru, Karnataka.*

### Introduction

In our Institution, generally feedback from the students after the lecture class is not taken. The success or failure of a lecture and involvement of students along with the lecture is never known. Therefore it was thought that a questionnaire for feedback from the students be prepared and the assessment of the lecture be done. The objectives of the study were

- To assess the lecture class by using a feedback questionnaire from 1<sup>st</sup> year undergraduate students.
- To collect the feedback from 1<sup>st</sup> year passed out students also.

## Methods

The study was conducted on the students of 1<sup>st</sup> year MBBS (2009-2010 batch) attending didactic lecture classes at Dr.B.R.Ambedkar Medical College, Bengaluru.

A series of 20 lecture classes was used for the study. A questionnaire was prepared by asking whether they understood the lecture, comments on the speed of teaching, handwriting, usage of blackboard, etc. The questionnaire was distributed at the end of the class and students were asked to give their feedback.

As I teach anatomy for 1<sup>st</sup> year students, assuming the feedback from them may be unnecessarily positive due to fear, I have also taken feedback from 1<sup>st</sup> year passed out students( ie,2008-2009 batch,2007-2008 batch,2006-2007 batch,2005-2006 batch)

## Results

In overall ratings of lecture class, 98% of students agreed that the lecture class was "Good-Excellent" category. 98% of students felt the usage of blackboard was excellent with appropriate colorful diagrams.97 % of students appreciated the audibility of lecture and good handwriting. However 2-3% of students felt overhead projector and powerpoint should have been used. Further 2-3% of students felt the lecture was very fast.

## Discussion

98% of the students felt usage of blackboard as an excellent teaching media and said they were also

given an opportunity to draw the diagrams along with the teacher which would have been an impossible task with powerpoint. In the 1<sup>st</sup> year ,usually anatomy is found to be interesting and it needs plenty of diagrams which the students are expected to draw to pass in their exams and to score more marks. So the majority of students felt they were able to understand the subject better as they also draw the diagrams along with the teacher and that's how studying and learning anatomy can be made simplified.

However 2-3% of the students felt in addition to blackboard, some videos also should be shown at the end of the class.

The positive feedback given by students was highly encouraging and such feedbacks will help to improve the method of teaching.

## Conclusion

By taking feedback from students, the lecture can be evaluated, and definitely there is always a scope for improvement. The strengths and weaknesses of a teacher will be known.

## Acknowledgements

- 1) NTTC Teaching faculty, JIPMER Pondicherry.
- 2) Dr.B.R.Ramesh ,Professor and HOD, All the teaching staff of department of anatomy,Dr.B.R.Ambedkar Medical College, Bengaluru.
- 3) All the Non-Teaching staff of department of Anatomy,Dr.B.R.Ambedkar Medical College ,Bengaluru.
- 4) All my dear students for their active participation.

\*\*\*\*\*