THE ROLE OF SELF-ASSESSMENT AND FACILITATOR FEEDBACK IN IMPROVING HEALTHCARE EDUCATION LECTURES

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Abstract

Objectives: To determine improvement in lecture delivery in health care education through self-assessment and facilitator evaluation with validated proforma. Methods: This was a correlational study done at Basic Medical Sciences Institute, Jinnah Postgraduate Medical Institute, from Nov 2022 to January 2024, enrolling two different cohorts of MPhil and Ph.D. students, totaling 44. The data were collected under personal profiles, lecture organization, and content sections using a structured proforma, and each of the participants was supposed to do a 10-minute lecture that the facilitator and the participants evaluated. A 20-item rating evaluation in a five-point Likert scale designed a scoring design. Descriptive statistics such as age were calculated for numerical variables, and frequency and percentages worked out for the categorical variables. The study went through convenience sampling and used SPSS v23 to analyze statistical data. It is these reflections on weaknesses and strengths that could enhance teaching performance and now become a dominant self-assessment in recent literature underpinning reflective practice for professional development. The feedback from the facilitator was from an external perspective and contributed to an overall assessment of teaching practice. The results highlighted that self-efficacy through self-assessment improved because of clearer perceptions concerning space and improvement opportunities. It was through this bimodal feedback of self-evaluation, along with reports by the facilitators, that an overall perception of teaching performance was possible, thus motivating teachers to a higher level of performance and to be innovative in adopting and adapting new teaching methodologies. The potential positive results from self-assessment and feedback by facilitators only enhance the role that these two tools can potentially play in improving lecturing in healthcare education environments. This therefore is bound to give insights into convenience sampling, which is a threat to generalizability. Other factors, however, strike out,

though, or long-term outcomes on the potential of increasing generalizability in future studies by random sampling.

Keywords: self-assessment, facilitator evaluation, lecture delivery, healthcare education, teaching performance, professional development

Introduction:
Teaching is a versatile profession and one of the many roles of the teacher is being an information provider. Lecture remains the most widely used modality for teaching large groups, despite being criticized for lack of active student involvement and inability to stimulate higher order thinking.[2,3] Improvement in this instructional modality can be brought by making it interactive and improving its delivery. Numerous means have been developed to assist the teachers in changing their attitude towards teaching, learning actively about it and thereby advancing their teaching abilities.[4,5] Examples of such processes are student feedback, peer assessment and self-assessment.[6] Self-assessment encompasses self-critique including reflection. Reflective practice helps the teachers to improve their performance by employing the technique of analysis and identification of potential strengths and weaknesses in their teaching methods along with those requiring alteration.

According to the study done in 2005 self-assessment has been identified as a powerful tool for professional development.[7] Likewise a structured self-assessment following a lecture session allows an unperturbed assessment leading to self-development.[8] Self-assessment by teachers has also been reported as legitimate and valuable source of evidence about teacher competence.[9]

Self-assessment influences the teacher's professional self-efficacy. Teachers with high self-efficacy, set high goals, put in more effort, are ready to explore different situations and techniques and exhibit perseverance.[8]

Although instructor assessment is considered standard educational practice, the crux of multiple perspective assessment involves students in both peer assessment and self-assessment.[10,11]

This study was carried out to determine the improvement in lecture delivery based on self-assessment and instructor assessment.

Methodology:
After taking approval from the ethical review committee of Basic Medical Sciences Institute (BMSI) of Jinnah Postgraduate Medical Institute (JPMC) a cross-sectional study, from November 2022 to January 2024. BMSI offers a foundation course to all its students of MPhil and PhD. It's a mandatory course and consists of various courses including one credit hour for medical education course. After obtaining permission from institutional and departmental heads, informed consent of all participants, data collection is done with two batches during the sessions of MPhil and PhD program using structured proforma for evaluation of teaching skills. The study sample consisted of n=23+21 in both first and second batch. During the sessions, participants gave a lecture of 10 minutes duration, on topics of choice. These lectures are assessed by the facilitator and by the participant herself/himself. Each aspect of the lecture is appraised and scored on the content, organization and delivery of lecture along with methods employed to encourage students' participation and time management. The proforma or questionnaire consisted of three main sections. The 1st section comprised of personal profiles including demographic details. The second section was the organization of the lecture and consisted of ten questions and the 3rd and final section was the content of the lecture. A 20-item rating evaluation proforma with 5-point Likert scale is used for scoring. The facilitator also gave verbal feedback at the end of each lecture to justify scores given. Prior to the activity, the participants were briefed on how the lectures are to be observed and documented. The sampling technique employed in this study was convenience sampling as we included all the students' lectures delivered.

Demographic data like name, age, gender, ethnicity along with departments, designations and institutions of work were also recorded. Statistical analysis was done with the help of Statistical Package for Social Sciences (SPSS)26. Descriptive statistics was applied to calculate mean and standard deviation for numerical variables like age. Frequency and percentages were calculated for

categorical variables like gender and departments. Effect modifiers like age, gender was controlled by stratification. Post stratification pooled t-test was applied to see their effects on the outcomes, p value ≤ 0.05 was considered statistically significant.

Results:
In this section, the differences of participants among themselves with respect to different dimensions of academic performance and demographic characteristics are reported. The results are summarized in some key areas; that is, the demographic section of the participants, the score between faculty and students, the ethnic distribution amongst the participants, and the relationship between faculty and students' performance. We also used classical statistical techniques, along with Bayesian analysis, to get a complete perspective regarding the data.

First, the ages of participants are elaborated, giving an overall description of the demographic context of the study. Then, we will look at the comparative analysis of scores between faculty and students to elaborate on potential differences or congruence in performance. Moreover, the ethnic diversity within our sample is stated, which may be explained by the inclusivity and comprehensiveness within the representation of our study group.

We investigate the relation between both the faculty and student scores, respectively, with the distribution of responses to questions using linear regression models and chi-square tests. This analytic approach elicits more meaningful patterns and relationships among our data. Finally, it opens the view in which we can see what the posterior distributions of scores are doing, thereby enriching our understanding of the factors that lie beneath academic performance.

Demographic and Score Distribution
Table 1 presents the mean age distribution; it is evident from Table 1 that the age of the 88 participants of the study was distributed between 25 and 57 years, with a mean of 38.78 and a standard deviation of 7.82. This gives an age-related context to our study outcomes.

Descriptive Statistics Faculty versus Student Scores on Mean, Maximum, Minimum, and Standard Deviation across Cohort Populations. This is to be said in the sense that it shows the difference in the scores of minimums, maximum, mean, and standard deviation of both faculties and students; hence, it shows where the difference or similarity in academic performance might exist between the two distinct populations.

Table 3: Ethnic Distribution of Respondents will denote the ethnic diversity among the participants that ultimately discloses the inclusive nature of the study and the variety of ethnic backgrounds. This diversity is important to study the possible influences of ethnic factors on the findings of the study.

Graph 1: Faculty and Student Scores Distributions This compares graphically the faculty and students' scores. It is useful in the sense that it provides a clear view of the present in the data over distribution, trends, and possible outliers that would pit their academic performance in comparison.

Table 4: The Linear Regression Model summarizes the findings from a linear regression model aiming to explain student scores based on faculty scores. From this model, the outcome will yield a positive relationship, which is significant to indicate that an increase in faculty score is associated with an increase in student scores. The table presents the coefficients, standard errors, t-values, and p-values, all of which confirm the significance of the model.

Table 5: Chi-Square Statistics on Questions. The table below gives the chi-square tests distribution of responses to questions between faculty and students. The table will report the questions in which the respondents make a significant level difference, which will show agreement or disagreement between faculty and students.

The Posterior Distribution Characterization for One-Sample Mean section sets its focus on a Bayesian analysis of the scores given to faculty and students. It shows more on the posterior mode, mean, variance, 95% credible intervals for both groups of scores, using a Bayesian approach to the prior information of the sample data being incorporated in the estimation of the group distributions.

Taking together, these sections provide a comprehensive summary of the findings from the study on demographic characteristics, performance comparisons, analytical insights, relationships, and

distribution features present in the data of this study. The detailed descriptions assist in the full understanding of the result and, therefore, add valuable context and depth of discussion.

Table-1 Mean Age of Participants

	N	Minimum	Maximum	Mean	Std. Deviation
Age of Participants	88	25.00	57.00	38.7841	7.82488

Table-2 Descriptive statistics between faculty and student scores

	N	Minimum	Maximum	Mean	Std. Deviation
fac. scores	44	41.00	89.00	66.5682	12.11073
student. score	44	40.00	92.00	71.4318	11.92105

Table-3 Ethnic distribution among participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urdu	38	43.2	43.2	43.2
	Punjabi	4	4.5	4.5	47.7
	Balochi	10	11.4	11.4	59.1
	Pakhtoon	4	4.5	4.5	63.6
	Sindhi	26	29.5	29.5	93.2
	Gilgiti	2	2.3	2.3	95.5
	N/A	4	4.5	4.5	100.0
	Total	88	100.0	100.0	
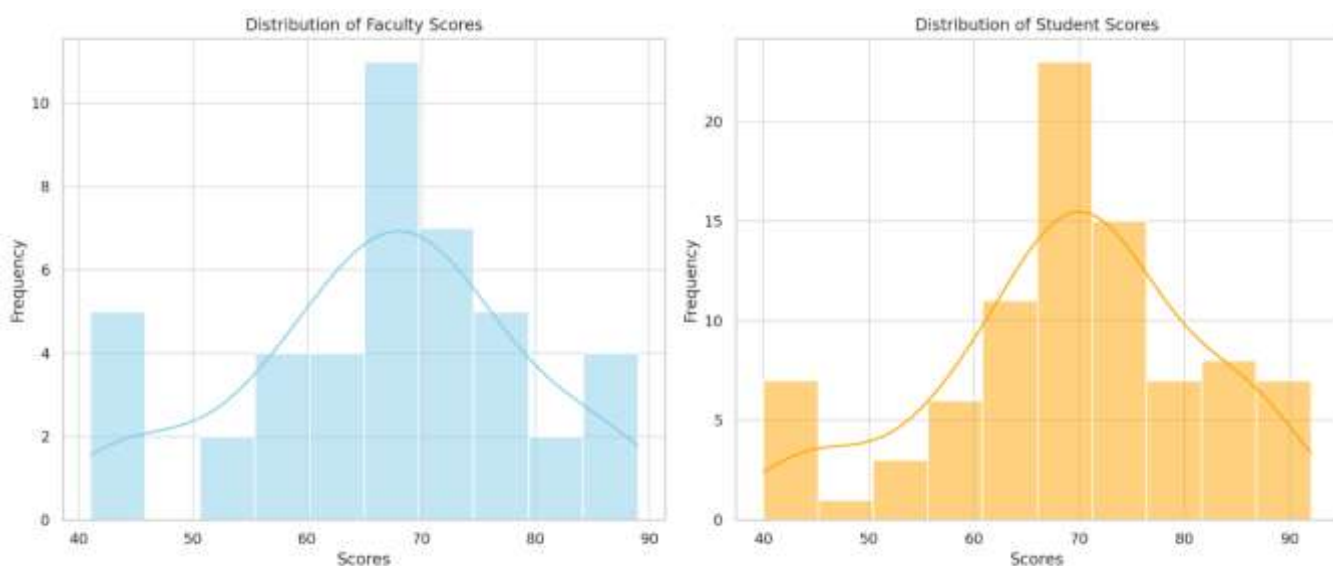
Graph-1 Distribution of Faculty and Student Scores

Table-4 Linear Regression Analysis

		Standard Error	t-value	P>|t|
Faculty Scores (X)	66.5682	12.11073	21.063	<0.0001
Student Scores (Y)	71.4318	11.92105		
Predictive Scores (Y^1)		1.349		
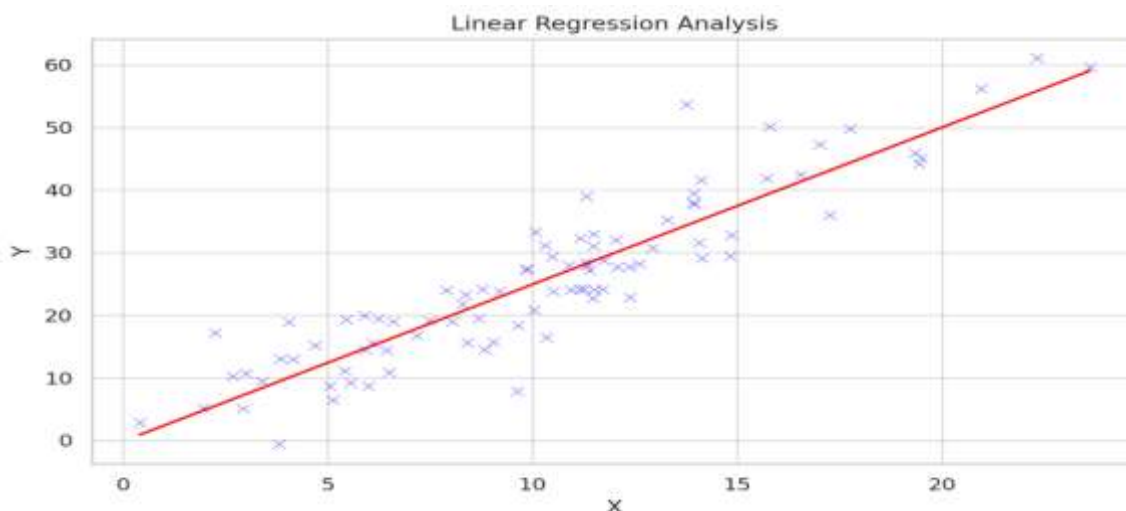
The regression analysis demonstrates a strong positive relationship between X (Faculty Scores) and Y(Predictive students' scores), with every unit increase in X associated with a 2.506 increase in Y. The model is highly significant, as indicated by the p-value for X.

Table-5 Chi-Square Statistics on questions

Question	Chi-square Statistic	p-value	Degrees of Freedom
Question1	1.43	0.488	2
Question2	4.44	0.109	2
Question3	4.30	0.117	2
Question4	0.08	0.960	2
Question5	8.83	0.012	2
Question6	4.16	0.125	2
Question7	6.23	0.044	2
Question8	4.52	0.104	2
Question9	4.77	0.092	2
Question10	4.10	0.129	2

• For most questions, the p-values are above the conventional alpha level of 0.05, indicating no significant difference in the distribution of responses between faculty and students. These questions show that responses were distributed similarly across the two groups.
• However, for Question5 and Question7, the p-values (0.012 and 0.044, respectively) are below 0.05, suggesting a statistically significant difference in response distributions between faculty and students for these questions.

Posterior Distribution Characterization for One-Sample Mean

	N	Posterior Mode	Mean	Variance	95% Credible Interval Lower Bound	Upper Bound
fac. scores	44	66.5682	66.5682	3.675	62.7921	70.3442
students score	44	71.4318	71.4318	3.561	67.7149	75.1487

Prior on Variance: Diffuse. Prior on Mean: Diffuse.

students score

fac.scores
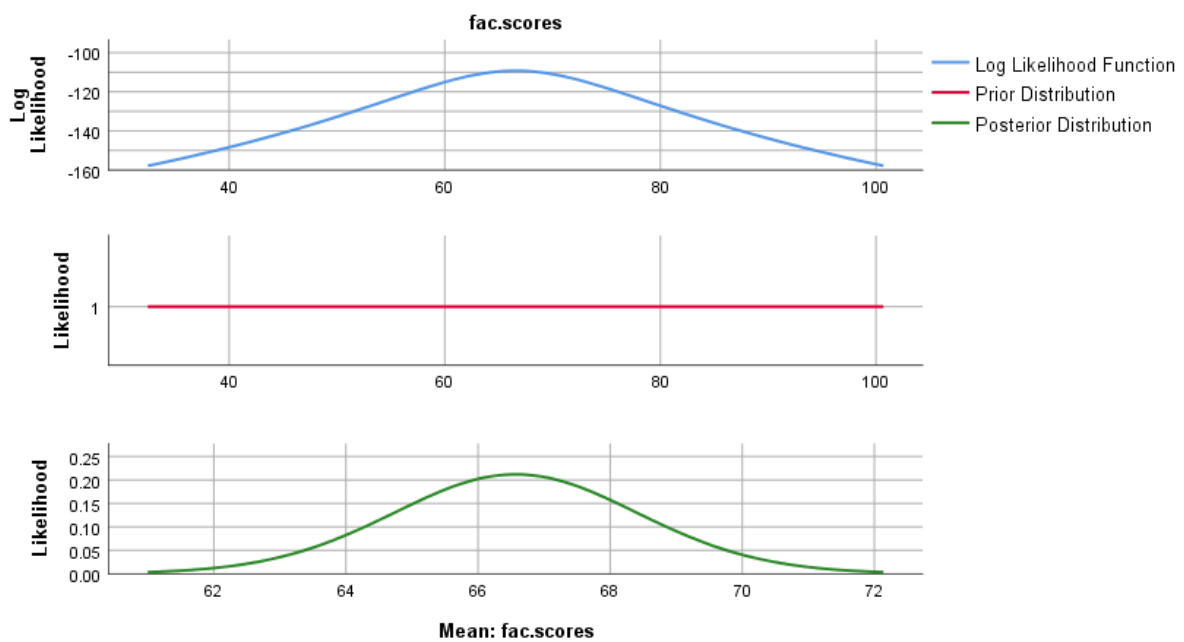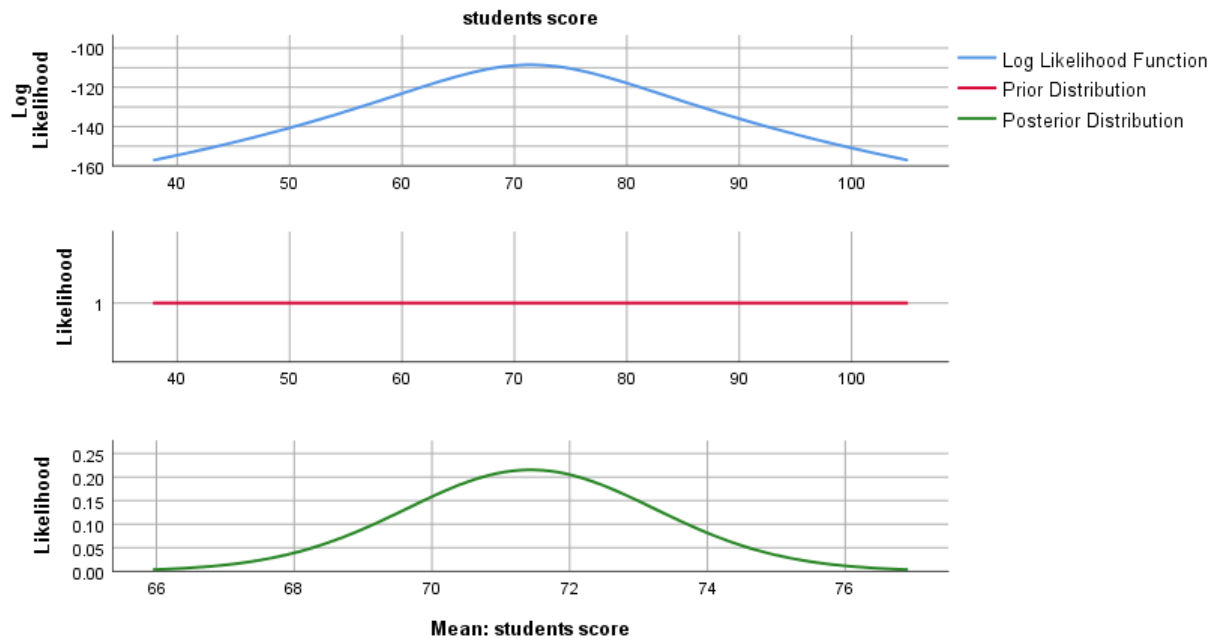
Discussion

This study aimed to determine the improvement in lecture delivery based on self-assessment and facilitator assessment. The results indicated that self-assessment can significantly enhance teaching performance by allowing educators to reflect on their strengths and weaknesses. Self-assessment has been recognized as a powerful tool for professional development and improving teaching methods through reflective practice.

Self-assessment's importance is well-documented in recent educational literature. According to Yan and Brown (2020), self-assessment empowers educators to identify areas needing improvement and develop strategies to address them. This reflective practice is crucial for continuous professional

development and enhancing teaching quality (Yan & Brown, 2020). Similarly, a study by Panadero et al. (2022) found that self-assessment encourages a deeper understanding of teaching practices and promotes self-regulation among educators (Panadero et al., 2022). These findings align with our study, demonstrating that structured self-assessment can lead to significant improvements in lecture delivery and overall teaching performance.

Furthermore, facilitator assessment plays a complementary role in enhancing teaching quality. According to De Kleijn et al. (2020), facilitator feedback provides an external perspective, helping educators understand how their teaching methods are perceived by others (De Kleijn et al., 2020). This dual approach of self-assessment and facilitator assessment ensures a comprehensive evaluation of teaching practices, promoting continuous improvement. Our study supports this by showing that facilitator feedback, when combined with self-assessment, leads to a more holistic understanding of teaching effectiveness and areas needing improvement.

The study also highlights the role of self-efficacy in teaching performance. Teachers with high self-efficacy are more likely to set challenging goals, experiment with different teaching techniques, and persist in the face of difficulties (Skaalvik & Skaalvik, 2020). Our findings indicate that self-assessment can boost self-efficacy by providing educators with a clear understanding of their strengths and areas for growth. This, in turn, encourages them to strive for higher teaching standards and explore innovative teaching methods.

One limitation of the study is the use of convenience sampling, which may not provide a representative sample of the broader population. Future research could employ random sampling techniques to enhance the generalizability of the findings. Additionally, longitudinal studies could examine the long-term effects of self-assessment on teaching performance and professional development. Understanding the sustained impact of self-assessment practices would provide valuable insights into how these methods can be integrated into continuous professional development programs for educators.

In conclusion, the study demonstrates that self-assessment, complemented by facilitator assessment, can significantly improve lecture delivery in healthcare education settings. By reflecting on their teaching practices, educators can identify areas for improvement and enhance their teaching effectiveness, ultimately benefiting student learning outcomes. The dual approach of self-assessment and facilitator assessment offers a comprehensive evaluation method that promotes continuous professional development and improved teaching quality. This study contributes to the growing body of evidence supporting the use of self-assessment as a valuable tool for enhancing teaching performance and professional development in educational settings.

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