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## An Intervention to Improve the Evaluation of Clerkship Students

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## Abstract

Effective feedback is an important part of formative evaluation of clerkship students, improving student performance by increasing awareness to strengths and weaknesses. The aim of this study was to obtain more helpful feedback in the Internal Medicine third-year clerkship rotation at Joan C. Edwards School of Medicine in Huntington, WV. The Internal Medicine department has 59 general and subspecialty faculty physicians. We changed the structure of the existing feedback form by requesting written comments at the beginning and asking for specific strengths and areas for improvement, educated faculty, and provided them with a milestones card. Three reviewers independently ranked the written feedback according to a rubric. We compared the quantity of either helpful or unhelpful feedback obtained during the 2016 and 2017 academic years with that obtained in the first rotation of 2018-2019. With our intervention, helpful comments increased from 33.8% to 79.2%. A kappa statistic revealed a lack of bias of the reviewers. A small change in the evaluation form along with an educational intervention and milestones card improved the quantity of helpful feedback given to students in the Internal Medicine clerkship.

## Keywords

medical school, student, rotation, education, internal medicine, faculty feedback

## Introduction

Effective feedback can be considered the cornerstone of improving performance in the clinical years of medical education. However, the quality of feedback is often lacking. Previous research shows that most comments given to clerkship students are too vague and unrelated to their clinical skills, preventing them from being helpful in changing students' performance.<sup>1</sup> Another study that attempted to improve feedback to clerkship students showed that changing the evaluation form can improve constructive written comments by 7%.<sup>2</sup> The purpose of this study was to increase helpful feedback for clerkship students by revising the evaluation form, educating the faculty on the importance of quality feedback, and linking a description of milestones<sup>3</sup> to the online evaluation form.

## Methods

### Revision of the evaluation form

The new evaluation form had several changes. First, we placed the written comments section at the top of the form as opposed to the bottom.<sup>2</sup> Second, instead of asking for "comments," we inserted two separate questions to ask for strengths and areas for improvement. Third, we inserted a link to student milestones<sup>3</sup> to provide examples of specific comments that the faculty evaluator could use in their feedback.

### Setting and participants

The Joan C. Edwards School of Medicine is located in Huntington, which is the second largest city in West Virginia. The Internal Medicine department has 59 general and subspecialty faculty

physicians who participated in this study. This study received IRB-exempt status from Marshall University IRB.

### Education intervention

In addition, we presented an hour-long education seminar to Internal Medicine faculty at the Internal Medicine Grand Rounds, providing information on the importance of quality feedback and how the milestones might be used. We gave the 59 faculty members a pocket-sized laminated copy of the milestones. For faculty who did not attend the live presentation, we made the PowerPoint slides available online and gave faculty development credit for reviewing the slides. Furthermore, we held yearly meetings with faculty and fellows to introduce evaluation forms and encourage more specific written feedback.

### Linking the milestones

The online evaluation tool (New Innovations) now has a hyperlink to the student milestones.

### Rating the pre- and post-intervention comments

Three investigators (one student and two faculty members) reviewed 891 written faculty comments from the previous two academic years (2016 and 2017) and 101 comments from the first rotation of the academic year following the intervention (2018). These comments were rated on a Likert scale (1-5) with an increasing grade of specificity and inclusion of strengths and weaknesses using the rubric shown in Table 1.

A vague, unrelated, or brief personal statement that doesn't talk about their performance	1
A vague, nonspecific statement that is related to their performance as a student	2
A statement that includes strengths or weaknesses, but lacks specific experiences	3
A specific statement that includes a specific experience that is only ONE sided	4
A specific statement that includes a specific experience that discusses BOTH strengths and weakness of student	5

**Table 1:** Rubric used for rating the quality of the feedback given to students

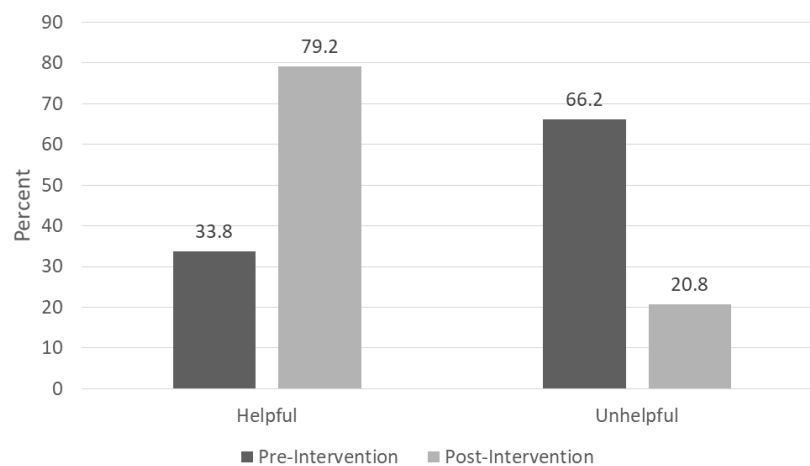
We rated the comments on two separate occasions, before and after the intervention. To ensure that there was no bias, we took 50 random comments from the 2016 and 2017 academic years (before the intervention) and included them among the 2018 comments (after the intervention) to see if reviewers would rate them the same or differently from what they said the previous year. We calculated a kappa statistic to determine if there was any difference between each reviewer's ratings on these 50 comments.

We labeled comments as helpful or unhelpful if the majority of the three reviewers agreed. We performed a Chi-squared analysis using the proportion of helpful comments (grouping together those ranked 3, 4, and 5) and unhelpful comments (ranked 1 and 2) pre- and post-intervention.

## Results

In order to address concerns regarding possible bias in the differential rating of the comments post-intervention, we calculated a kappa statistic. The ratings for the same 50 randomly selected comments in the pre- and the post-intervention periods showed significant agreement between all three reviewers (reviewer 1, kappa 0.706,  $p < 0.01$ ; reviewer 2, kappa 0.744,  $p < 0.01$ ; reviewer 3, kappa 0.650,  $p < 0.01$ ).

A chi-squared test was performed to analyze the relationship between the helpful and unhelpful comments pre- and post-intervention. This test showed an increase in the proportion of helpful comments from 33.8% before the intervention to 79.2% after the intervention as well as a decrease in the proportion of unhelpful comments from 66.2% before the intervention to 20.8% after the intervention. The relationship is shown in Figure 1.



**Figure 1:** Quality of Comments Pre- and Post-Intervention: A Chi-squared analysis of the proportion of helpful comments (3,4,5) versus unhelpful comments (1,2) pre- and post- intervention.  
Pearson  $\chi^2 = 79.13$ ;  $p < 0.01$

## Discussion

Our research showed that a simple education intervention along with a change in the evaluation form improved the quality of feedback given to students. We made it easier for faculty by asking for specific strengths and weaknesses at the beginning of the evaluation form and by providing examples of written feedback in the form of milestones. These small changes afforded a significant improvement in the quality of written comments.

A previous study that sought to improve the helpfulness of the comments to clerkship students through education workshops alone was able to moderately increase comment specificity and improve student performance.<sup>4</sup> This study, however, was limited by the fact that the effect of faculty development programs alone may diminish over time.<sup>5</sup> We realize that our educational intervention will also likely decrease with time. We plan to reinforce our initial intervention with yearly detailed visits at department section meetings.

Another previous study sought to improve the effectiveness of comments through changing the placement of the written comments section and the wording of the form. This resulted in a mild increase in the length of the comments and the number of constructive comments.<sup>2</sup> Our intervention produced a much greater increase in helpful comments. This could be due to the fact that we had a multi-faceted intervention rather than just a change in the form.

Our project is not without limitations. It was difficult to generate a rubric to rate the comments in an objective manner; however, we feel that grouping the comments into helpful and unhelpful categories probably increased our accuracy. The fact that the reviewers were not blinded to the intervention created potential bias or decreased intra-rater agreement; however, we showed an agreement between the pre- and post-intervention ratings and a lack of bias based on the kappa statistic. Although we showed improvement in the quality of feedback, our study was not designed to measure the effect of this improved feedback on student performance.

## Conclusion

A multifaceted intervention to improve helpful written comments to clerkship students was significantly effective. The next step in quality improvement is to change the remaining 20% of unhelpful comments into helpful ones. Areas of continued research include examining individual faculty members who may contribute the most unhelpful comments and providing a peer review with feedback as an intervention. We can also analyze the stability of the effect of our intervention over time and determine whether a yearly booster via a detailed intervention improves stability. Finally, because the goal of our intervention is ultimately to increase the education and performance of students, we should look at the effect of receiving higher quality feedback on these outcomes.

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