Exploration of Factors That Positively Influence Medical Student Reception of Question-Based Teaching in Clinical Settings

Asha S. Jain, BS; Jacob J. Abou-Hanna, MD; Elizabeth M. Petty, MD

ABSTRACT

Introduction: Academic medicine literature has reported hesitation from clinical teaching physicians to use questions when teaching medical students due to its negative connotation of "pimping." However, newer literature suggests that most students prefer questions, while only a small minority are less welcoming. Some teaching physicians, however, have concerns about using questions due to the risk of humiliating or embarrassing medical students in clinical settings.

Methods: Medical students who completed core clerkship rotations at a public medical school in the Midwest were invited to participate in 1 of 4 virtual focus groups. Students were asked to reflect on 3 clinical teaching vignettes. Inductive thematic qualitative analysis was performed to create a codebook. The transcripts were coded by 2 independent coders for emerging themes.

Results: Twenty-six students participated across 4 groups. Four major themes were identified that demonstrate positive student reception of teaching physicians and their questions: teaching physicians (1) engaging students, (2) setting clear expectations, (3) empathizing with the medical student experience, and (4) asking questions to teach rather than evaluate. Thematic coding of the 3 vignettes resulted in initial intercoder reliabilities of 85.4%, 87%, and 79%, prior to achieving 100% consensus. Students described the ideal teaching physician to be patient, engaged, and respectful.

Conclusions: By engaging medical students, setting clear expectations early on, empathizing with the medical student experience, and asking questions with the purpose of teaching, teaching physicians can be less hesitant about upsetting medical students when utilizing questions as a teaching tool.

• • •

Author Affiliations: University of Wisconsin (UW) School of Medicine and Public Health, Madison, Wisconsin (Jain, Abou-Hanna, Petty); Department of Ophthalmology and Visual Sciences, UW School of Medicine and Public Health, Madison, Wisconsin (Abou-Hanna); Department of Pediatrics, UW School of Medicine and Public Health, Madison, Wisconsin (Petty).

Corresponding Author: Elizabeth M. Petty, MD, 750 Highland Ave, Madison, WI 53705; phone 608.263.2480; email epetty@wisc.edu; ORCID ID 0000-0003-1171-7608

INTRODUCTION

Questions have been a mainstay of teaching throughout recorded medical education. The Socratic method, named for the Greek philosopher Socrates, is a questioning technique used in academic medicine that allows students to apply their knowledge to clinical scenarios.[1] The goal of Socratic teaching is to build upon the student's level of understanding and encourage self-directed learning. However, the practice of teaching medical students by asking questions has taken on the negative connotation of "pimping" in recent years. "Pimping," first defined by Brancati in 1989, is a form of teaching where the teaching physician in a clinical learning environment poses a series of difficult questions to the learner.[2] Though not always used maliciously, this style of questioning has become associated with reaffirming the hierarchical nature of medicine and reported student embarrassment, humiliation, and belittlement in group settings.[3]

Recent literature highlights that teaching physicians may feel they are walking on eggshells when using questions to teach medical students due to fear of it being misconstrued as "pimping"—particularly at institutions that encourage students to report all forms of mistreatment, including public embarrassment, humiliation, and belittling, without fully considering teaching physician perspectives or actions.[4] However, newer literature suggests that the majority of students do, in fact, prefer to be asked questions on clinical rotations, while only a small minority are less welcoming of questions from teaching physi-

Table 1. Clinical Vignettes and Probing Questions for Focus Groups Regarding Student Reception of Faculty, University of Wisconsin School of Medicine and Public Health 2023

Vignette A

The attending physician, Dr. A, is rounding on the medical student's patient. After the student presents the daily updates in SOAP format (Subjective, Objective, Assessment, and Plan), the following dialogue takes place:

Dr. A: Thank you. Why do you think your patient has leg edema?

Student: I am not entirely sure. I just know that we diurese them because of fluid overload.

Dr. A: Correct and that's okay. Let's see if we can get through the mechanism together. What chronic disease does this patient have?

Student: Uncontrolled heart arrhythmia.

Dr. A: Yes. And you said uncontrolled which is important. Essentially the heart was overworked leading to dilated heart chambers. Can you take it from here?

Student: Okay so dilated chambers leads to the heart not pumping correctly. So blood isn't moving forward resulting in fluid buildup.

Dr. A: Perfect! There is also fluid in the lungs which is why they are hypoxic. So, we diurese to decrease fluid overload and also give oxygen to minimize hypoxia and decrease the stress on the heart. This is a nice example of how understanding the mechanism guides therapy. Good job working through that, [student name]! What questions do you have?

Probing Questions:

1. What are your thoughts on this teaching interaction?
2. Why would this be an attending you would or would not like to work with?
3. What did Dr. A say that you, as a learner, liked or didn't like?
4. What would you write on their rotation evaluation based on this interaction?

Vignette B

Dr. B, the attending physician, asks to meet with the medical students that just joined the service. After introductions, Dr. B explains the student expectations, provides a list of topics that the student is expected to read about for each week, and then gives a detailed explanation of what the student evaluation is based off of. Dr. B then says the following:

I like to teach medical students by asking questions. My objective is to identify gaps in your knowledge of medical facts and concepts, thereby guiding me on what to teach you about. The questions will correspond to your assigned reading topic each week. I care less about you getting the answer right and much more about you thinking through the questions and reasoning through an answer. When you get a question wrong, I don't want you to feel embarrassed. Instead, I want you to think of it as an opportunity to learn something new!

Probing Questions:

1. What are your thoughts on this interaction?
2. Why would this be an attending you would or would not like to work with?
3. What did Dr. B say that you, as a learner, liked or didn't like?
4. Why might this kind of orientation be valuable or invaluable?
5. What would you write on their rotation evaluation based on this interaction?

Vignette C

Dr. C, the attending physician, is operating with the medical student. The following interaction then takes place.

Dr. C: Okay, time for questions. What is this structure here?

Student: I think it's the inguinal canal.

Dr. C: What is this structure?

Student: The peritoneum.

Dr. C: Correct.

5 minutes later, the conversation continues.

Dr. C: What are the contraindications for this surgery?

Student: Metastatic spread.

Dr. C: Good.

3 minutes later, the conversation continues.

Dr. C: More questions. What is the cancer staging based off of?

Student: The Ann Arbor criteria.

Dr. C: That is incorrect. Is radiation indicated for this patient?

Student: No.

Dr. C: Explain.

Student: We can resect with good margins.

Dr. C: Good.

30 minutes later the case ends.

Probing Questions:

1. What are your thoughts on this teaching interaction?
2. Why would this be an attending you would or would not like to work with?
3. What did Dr. C say that you, as a learner, liked or didn't like?
4. What would you write on their rotation evaluation based on this interaction?

cians.[5] Furthermore, a study from the University of Washington School of Medicine found that the style of questioning used in medical teaching was not a risk factor for public humiliation as long as learners were appropriately conditioned to the teaching practice.[6] Student responses from this study identified that the perceived intent of the teaching physician was the most important factor for whether students experienced public humiliation from questioning.

One way to improve student perception of using questions as a teaching tool is to foster a healthy student-teaching physician relationship. Several studies highlight the importance of clear communication between the student and teaching physician to encourage positive and respectful interactions that build trusting relationships in the learning environment.[7,8] We hypothesized that when students have developed positive and trusting relationships with teaching physicians, they are more generous about accepting various teaching styles, including direct questioning in clinical settings. Existing literature, namely by Abou Hanna et al, used a survey approach to quantify student opinions regarding questioning.[5] By utilizing a qualitative study design, we hoped to delve deeper into specific student experiences and identify factors that make students more receptive and respond positively to questions from teaching physicians. The goal of this study was to determine how teaching physicians can use questions in a positive way that promotes learning.

METHODS

Study Design

A focus group approach was chosen to generate qualitative data to explore student perceptions of questions from teaching physicians.

The script for the focus groups was constructed using an iterative process by a resident and a senior faculty leader of health professions education (JJA and EMP). To guide the focus groups, the script contained 3 teaching vignettes with probing questions to

facilitate discussion (Table 1) and 4 general discussion questions. Teaching vignettes were based on common clinical scenarios that were reviewed by 5 additional teaching physicians selected based on teaching credentials. These 4 discussion questions were analyzed:

1) What piece of advice would you give every attending physician regarding teaching on the wards?
2) Think of your favorite attending physician you have worked with clinically. What was it that made them your favorite?
3) What 3 adjectives would you choose to describe the ideal attending physician in a clinical teaching role?
4) How do you think students' perception of teachers is affected by factors such as age, reputation, cultural background? Are there other factors that matter (political beliefs, gender, race)?

The University of Wisconsin Institutional Review Board deemed this study exempt (ID: 2022-0940, exempt on August 31, 2023).

Participants and Focus Groups

Eligible participants were third- and fourth-year medical students who completed their required core clerkships by March 2023 at the University of Wisconsin (UW) School of Medicine and Public Health. Core clerkships at this medical school are completed by second-year and third-year students through 4 integrated clinical content blocks over a 12-month period. These core clerkships took place at statewide teaching hospitals that have longstanding affiliations with the UW School of Medicine and Public Health.

Students were recruited in February 2023 via email and approved social media outlets. Those students who responded were invited to participate in one of four 90-minute virtual focus groups, with a participant cap of 8 students per focus group. All participants stayed for the entire duration of the focus group. Basic demographic information was collected using an anonymous survey prior to the focus groups.

All focus groups were conducted by 1 facilitator from the research team (JJA) and followed the same guide with questions and optional probes for consistency. The focus group facilitator (JJA) was guided in facilitation techniques by a senior faculty member (EMP) who has experience with peer-reviewed published qualitative research, as well as training and direct experience in focus group facilitation. Sessions were conducted and recorded via Zoom (Zoom Video Communications, San Jose, California). Sessions were auto-transcribed by Zoom and reviewed by the research team (ASJ). All identifying information was removed from the final transcripts. All video files and unedited transcripts were deleted once final deidentified transcripts were created and checked for accuracy.

Students were given a thank you gift for attending the focus group. Internal funding was provided by the UW Department of Ophthalmology and Visual Sciences Resident Research Fund.

Table 2. Demographics and Specialty Interests of Student Participants in Focus Groups Regarding Student Reception of Faculty

Age (mean, range)	26.2, 6
Gender (n, %)	
Male	7 (27%)
Female	19 (73%)
Training year (n, %)	
Third year	14 (54%)
Fourth year	12 (46%)
Race (n, %)	
White	23 (88%)
Black or African American	2 (8%)
Asian	1 (4%)
Surgical Interest (n, %)	
Surgical	8 (31%)
Nonsurgical	18 (69%)
Speciality of interest (n, %)[a]	
Anesthesiology	2 (8%)
Diagnostic radiology	1 (4%)
Emergency medicine	3 (12%)
Family medicine	4 (15%)
General surgery	3 (12%)
Internal medicine	3 (12%)
Neurosurgery	1 (4%)
Obstetrics/gynecology	1 (4%)
Orthopedic surgery	1 (4%)
Pediatrics	5 (19%)
Plastic surgery	1 (4%)
Psychiatry	2 (8%)
Vascular surgery	1 (4%)

[a]Two students selected more than one specialty of interest, resulting in n of 28.

Data Analysis

Inductive thematic qualitative analysis was performed to create a codebook to analyze the transcripts.[9,10] Transcripts were reviewed to identify codes from student responses to the vignettes. Codes were subsequently categorized into thematic areas. Themes were identified by vignettes that were either a positive or negative example of teaching physician behavior. The codebook was created by the research team (JJA, ASJ, EMP).

Transcripts were coded independently and reviewed for agreement by 2 coders (JJA and ASJ). The codebook was used to analyze the following student responses: vignette A, vignette B, vignette C, discussion question 1, discussion question 2. While the codebook was derived from the vignettes, we intentionally used the same codebook for deductive thematic analysis of the discussion questions to determine if similar themes emerged in open discussion. Positive and negative student responses were coded as the same code when comments on the underlying teaching physician behavior was consistent. This allowed identification of key themes. The intercoder reliability was calculated and discrepancies were addressed among coders by discussion to reach consensus to result in a final intercoder reliability of 100%.

The top 3 adjectives were identified from discussion question 3. Discussion question 4 was an open-ended question with a wide

variety of responses, and content analysis was used to identify common themes by frequency.

RESULTS

Thirty-two students accepted the initial invitation to participate, but only 26 students ultimately participated across the 4 focus groups. Resulting focus groups ranged in size from 5 to 8. Demographic information for student participants is shown in Table 2.

Coding

The final codebook consisted of 4 themes and 17 codes (Table 3). A total of 343 responses were tallied and agreed on by both coders. Responses were coded and categorized into thematic areas (Tables 4 and 5). The most common theme across the focus groups was using questions for teaching rather than evaluating (35%, n = 121), followed by being engaging and interactive with students (29%, n=98), setting expectations (20%, n = 68), and empathizing with the medical student experience (16%, n = 56). The 6 most common subthemes were setting explicit expectations at the beginning (12%, n = 40), creating a safe space (10%, n = 36), elaborating on a topic after asking questions (10%, n = 34), acknowledging student effort (9%, n = 30), using guiding questions to lead the student to the answer (7%, n = 25), and the teaching physician normalizing not knowing (7%, n = 23).

The intercoder reliability was calculated using the following formula:

$$2M/(N_1 + N_2)$$

M = total number of decisions agreed upon by coders, N_1 = number of decisions made by coder 1 (JJA), N_2 = number of decisions made by coder 2 (ASJ).

Thematic coding of the 3 vignettes resulted in intercoder reliabilities of 85.4%, 79%, and 87% for the themes. Intercoder reliabilities for discussion questions 1 and 2 were 79.4% and 78%, respectively. We met to discuss discrepancies to reach 100% consensus for analysis.

Table 3. Codebook for Coding Student Responses in Focus Groups Regarding Student Reception of Faculty

Code	Examples
THEME A: Being Engaging and Interactive	
1 Introductions	Taking time to introduce themselves at beginning of rotation
	Attending learning student name
	Being aware of student coming into rotation
2 Taking time to ask questions	Dedicating time to students
	"Taking time out of busy day"
3 Acknowledging student effort	Compliment their knowledge (good job)
	Acknowledging if they have been reading
	Using student name
	Giving positive reinforcement
4 Getting to know student	Asking about interests/hobbies, career goals
	Mentorship
	Rapport
5 Giving student role/responsibility	Using student note
	Autonomy
	Not ignoring student presentation
	Responsibility
	"Carrying their own patients"
	Participate in surgery
THEME B: Setting expectations	
1 Giving explicit expectations at the beginning	Be exact about how students are graded and what they are expected to do
	Set goals of learning for the rotation
	Providing "structure"
	Giving learning objectives
	"Goals of the rotation"
2 Specifying learning material/tools	Providing reading material
	Giving reading schedule
	Specifying content students responsible for knowing
3 Explicitly stating they will be teaching	Stating they want to teach
	Explaining why/how they ask questions to teach
THEME C: Empathizing with the medical student experience	
1 Transition statement that questioning session is about to begin	Giving students a heads up they are about to be "put on the spot"
2 Meeting student at their level of understanding	"Learning gaps"
	Tailoring teaching to student level of understanding
	Figuring out or asking how much they know about a topic before teaching/questioning
3 Time-realistic expectations	Give appropriate amount of reading material
	Give appropriate timeline
4 Faculty normalizing not knowing	Faculty says "that's okay"
	Negative: "how could you not know this?" or similar
	"This is a hard concept to get down"
THEME D: Using questions to teach rather than evaluate	
1 Elaborating on topic after questions asked/answered	If incorrect, explaining the correct answer vs saying "wrong"
	If correct, taking it a step further
	Providing feedback after a question
	Negative: not explaining the incorrect/correct answer
2 Body language/tone during teaching session	Negative: rolling eyes or equivalent
	Inviting body language, eye contact
	Negative: student feeling like they are talking to themselves
	Handing instrument gently vs aggressively in operating room
	Laughing "with" vs "at"
3 Guiding questions/building up questions	Asking small questions to get from A to B to C
	Having clear purpose to the question
	Not giving the answer right away. Letting the student try
	Helping student work their way through a complex mechanism
4 Opportunity for student to ask questions	Faculty asking if there are any questions
	Giving time for questions
5 Creating a safe space	Judgement free; not worrying about feeling stupid
	Welcoming, (non)intimidating, comfortable
	If student mentions faculty verbally normalizes not knowing, code under 12

Vignettes

In vignette A, the most common theme was using questions for teaching rather than evaluating (57%), followed by being engaging and interactive with students (27%). In vignette B, the most common theme was setting expectations (57%), followed by empathizing with the medical student experience (12%). In vignette C, the most common theme was using questions for teaching rather than evaluating (66%), followed by being engaging and interactive with students (19%). In total for all the vignettes, the most common theme was the focus of the teaching physician on using questions for teaching rather than evaluating.

Table 4. Themes of Student Responses in Focus Groups Regarding Student Reception of Faculty

Theme	Vignette A n (%)	Vignette B n (%)	Vignette C n (%)	DQ1 n (%)	DQ2 n (%)	Total n (%)
Intercoder reliability	(85.40)	(79)	87	79.4	78	
Being engaging and interactive	18 (27)	10 (11)	15 (19)	20 (47)	35 (59)	98 (29)
Setting expectations	0 (0)	54 (57)	2 (3)	7 (16)	5 (8)	68 (20)
Empathizing with the medical student experience	11 (16)	20 (21)	10 (13)	6 (14)	9 (15)	56 (16)
Using questions to teach rather than evaluate	38 (57)	11 (12)	52 (66)	10 (23)	10 (17)	121 (35)

Abbreviation: DQ, discussion question.

Notable student quotations from the vignette discussions that exemplified each theme were identified and include the following examples.

Being engaging and interactive with students

"I tend to acknowledge on my reviews when I can tell the attending [physician] is actually taking some time to walk through and teach something. I really appreciate that because I know they're busy." (vignette A)

"I think one positive thing, while it's a little more subtle, there still is a little bit of positive reinforcement. … Dr. C says, 'good that's correct'." (vignette C)

"At the bare minimum, I liked that this attending [physician] talked to the student in the OR (operating room)." (vignette C)

Setting expectations

"Hopefully the readings are a reasonable length. Because I have had it where you have 60 pages on a pdf … that would be kind of an unrealistic expectation." (vignette B)

"I really like that the expectations were really clear. I think that sometimes, as a medical student, it can feel really overwhelming to be asked a bunch of questions because you're not really sure like what the point is, or how that attending [physician] is trying to use that question-and-answer style. So I think that saying explicitly 'This is how I'm using it, and this is what I'm hoping you get out of it' really helps alleviate some of that anxiety that comes along with being quizzed and makes it a more useful experience." (vignette B)

"Sometimes there's almost this expectation that we find the gaps in our knowledge. But how are we supposed to know what those are from the beginning? So, having someone who is an expert in whatever field that you're working in that day or week, say, 'Here are the things that I really think are important for you to get out of this rotation, and this is what I want you to walk away from' … is super helpful." (vignette B)

Table 5. Codes of Student Responses in Focus Groups Regarding Student Reception of Faculty

	Top 3 Subthemes	n (%)
Vignette A	Creating a safe space	16 (24)
	Guiding questions	15 (22)
	Acknowledging student effort	10 (15)
Vignette B	Giving explicit expectations in beginning	28 (29)
	Specifying learning material/tools	14 (15)
	Faculty normalizing not knowing	12 (13)
Vignette C	Elaborating on topic after asking question	27 (34)
	Body language/tone	10 (13)
	Taking time to teach/ask questions	9 (11)
Discussion Q1	Acknowledging student effort	7 (16)
	Giving explicit expectations in beginning	7 (16)
	Getting to know student	6 (14)
Discussion Q2	Giving student role/responsibility	14 (24)
	Acknowledging student effort	8 (14)
	Getting to know student	8 (14)
Total	Setting explicit expectations at beginning	40 (12)
	Creating a safe space	36 (10)
	Elaborating on topic after asking question	34 (10)

Abbreviation: Q, question.

Empathizing with the medical student experience

"I really like that they started off by acknowledging that you did know something and then also normalize a little bit that it's okay not to know the answer or not to know everything." (vignette A)

"I think the use of the specific word 'when' in Dr. B's conversation … is really important, and it establishes you're going to get questions wrong, and that's okay. It's not an if, it's a when." (vignette B)

"I do appreciate that this person moved on after a wrong answer or asked a different question. They didn't say something like 'medical students at your level should know this,' or they didn't give those little extra flavorings that people who really want to make you feel bad give you. I appreciate that." (vignette A)

Using questions for teaching rather than evaluating

"I think a lot of the choices of the attending's language were just really intentionally positive. But I just liked that Dr. A. said,

'Let's see if we can get through the mechanism together,' and asking, 'Can you take it from here?' Just very intentional choices of words to make it a less stressful experience." (vignette A)

"When the student in this scenario gets a question wrong, there's no 'tell me why you thought,' or 'what kind of guided you to that answer' and then actually providing the correct answer. It was just move on to the next one. And so basically see how many questions you can get right." (vignette C)

"I also think some of the attending [physician] responses are really short, like 'what are the contraindications?' And the student mentions one thing, and then the attending just says good. They don't really go on to say any other contraindications or take a moment to teach." (vignette C)

Discussion Questions

Question 1

When asked what advice students would give teaching physicians before teaching on the wards, the most common themes were being engaging and interactive with students (47%) and using questions for teaching rather than evaluating (23%). The most common codes were acknowledging student effort (16%), giving explicit expectations in beginning (16%), and getting to know the student (14%).

Question 2

Student descriptions of their favorite attending physician elicited 2 major themes: being engaging and interactive with students (59%) followed by using questions for teaching rather than evaluating (17%). Most common codes were giving students a role and responsibility (24%), acknowledging student effort (14%), and getting to know the student (14%).

Question 3

When asked for 3 adjectives to describe the ideal attending physician in a clinical teaching role, the most common responses were being patient (16%), engaged (11%), and respectful (9%). We noticed that the first response per focus group set the tone for future responses from students (Appendix Table 1).

Question 4

When discussing factors that affect student perception of teaching physicians, the following major themes emerged:

- Attending physicians with similar demographics to the student can create a more comfortable learning environment and be a role model (37%, n = 7).
- Attending physicians who recently finished training can be more relatable, friendlier, and empathetic to the student experience (16%, n = 3).
- Student treatment norms vary by specialty and can affect student perception of an attending physician prior to starting the rotation (10%, n = 2).

DISCUSSION

Questions are one of the primary teaching tools used in clinical teaching. The Socratic method of questioning has been a mainstay in clinical teaching for over a century, but this process also has been referred to as "pimping," a term coined by Brancati in 1989 to describe a series of difficult questions to the trainee.[2,11] Pimping has been associated with student humiliation in group settings and shame for not knowing the answer. Furthermore, teaching physicians who pimp students have been criticized for teaching by intimidation, establishing the medical "pecking order," and creating a hostile atmosphere.[3] Although pimping has this negative connotation, students can view this experience as a learning tool given that incorrect answers are often more memorable than correct ones.[12]

The goal of our study was to identify factors that impact students' perceptions of teaching physicians, thereby giving them more grace in utilizing different teaching styles. In this report, we found that teaching physicians who are engaging with students, set expectations, are aware of the medical student experience, and utilize questions to teach versus evaluate are better received by students. These themes have been described previously in the literature as ways to improve mentor-mentee relationships.

Leary et al conducted an interview-based study of 44 pediatric hospitalists that showed setting specific expectations at the beginning of the mentoring relationship was necessary for its success.[13] Mentors and mentees can have different expectations, and establishing clear parameters in the beginning allows the relationship to be tailored to individual preferences. In addition, building rapport was described by Atkinson et al in the European *Journal of Pediatrics* to be an integral component of effective clinical mentoring.[14] Learners are more receptive to feedback and guidance when there is a respectful and trusting relationship with their mentor. Furthermore, having open dialogue with the student allows the mentor to gain a deeper understanding of the learner's individual goals, thus promoting a growth over assessment mentality.

Our findings add to the existing literature by providing concrete examples of characteristics students value in teaching physicians. For example, students suggested specific verbiage for how to normalize a student not knowing the answer by saying "when a question is answered incorrectly" as opposed to "if." Additionally, several students highlighted the importance of positive reinforcement, even in phrases as simple as "good" or "that is correct." Both are examples of simple and tangible ways teaching physicians can improve student reception of questions in real-world clinical environments.

There are limitations in our study worth noting. First, the generalizability of the data is limited since this is a single institution study by those who volunteered. The sample size only consisted of 26 students across 2 medical student cohorts, and there was an uneven distribution of gender and racial representation across spe-

cialties. However, despite these limitations, there was good consensus among focus group participants, and themes that emerged were consistent across focus groups as well.

We specifically explored factors that affect medical student perception of teaching physicians. Future work could build upon our findings by conducting similar focus groups at other medical schools to identify common themes across multiple institutions. The associations between a student's preferred themes and standardized exam performance could be investigated. Participants could be divided by specialty or year to determine specific differences per specialty. Specifically, we noticed that students pursuing surgery were more accepting of Vignette C, and future work could further investigate the differences between surgical and nonsurgical medical student teaching strategies. In addition, consideration of other demographic variables of the students and teaching physicians could be considered to determine how other factors impact student perceptions of teaching physicians using questions to teach. Finally, future studies that incorporate teaching physician perspectives and experiences could be valuable to help develop relevant clinical teaching tools.

CONCLUSIONS

By engaging medical students, setting clear expectations early on, empathizing with the medical student experience, and asking questions with a purpose of teaching, teaching physicians in the clinical learning environment can help foster a positive mentorship relationship with learners, and thus be less hesitant about upsetting medical students when utilizing questions as a teaching tool.

Financial Disclosures: Author EMP received some support from the Kern National Network on Flourishing in Medicine.

Funding/Support: Internal funding was provided by the University of Wisconsin Department of Ophthalmology and Visual Sciences Resident Research Fund.

Appendix: Available at www.wmjonline.org

REFERENCES

1. Oh RC, Reamy BV. The Socratic method and pimping: optimizing the use of stress and fear in instruction. *Virtual Mentor*. 2014;16(3):182-186. doi:10.1001/virtualmentor.2014.16.03.medu2-1403

2. Brancati FL. The art of pimping. *JAMA*. 1989;262(1):89-90.

3. Kost A, Chen FM. Socrates was not a pimp: changing the paradigm of questioning in medical education. *Acad Med*. 2015;90(1):20-24. doi:10.1097/ACM.0000000000000446

4. Gold MA, Rosenthal SL, Wainberg ML. Walking on eggshells with trainees in the clinical learning environment-avoiding the eggshells is not the answer. *JAMA Pediatr.* 2019;173(10):907-908. doi:10.1001/jamapediatrics.2019.2501

5. Abou-Hanna JJ, Owens ST, Kinnucan JA, Mian SI, Kolars JC. Resuscitating the Socratic method: student and faculty perspectives on posing probing questions during clinical teaching. *Acad Med.* 2021;96(1):113-117. doi:10.1097/ACM.0000000000003580

6. Markman JD, Soeprono TM, Combs HL, Cosgrove EM. Medical student mistreatment: understanding 'public humiliation.' *Med Educ Online*. 2019;24(1):1615367. doi:10.1080/10872981.2019.1615367

7. Gan R, Snell L. When the learning environment is suboptimal: exploring medical students' perceptions of "mistreatment." *Acad Med.* 2014;89(4):608-617. doi:10.1097/ACM.0000000000000172

8. Baecher-Lind LE, Chang K, Blanco MA. The learning environment in the obstetrics and gynecology clerkship: an exploratory study of students' perceptions before and after the clerkship. *Med Educ Online*. 2015;20:27273. doi:10.3402/meo.v20.27273

9. Kiger ME, Varpio L. Thematic analysis of qualitative data: AMEE Guide No. 131. *Med Teach*. 2020;42(8):846-854. doi:10.1080/0142159X.2020.1755030

10. Stalmeijer RE, Mcnaughton N, Van Mook WN. Using focus groups in medical education research: AMEE Guide No. 91. *Med Teach*. 2014;36(11):923-939. doi:10.3109/0142159X.2014.917165

11. Lo L, Regehr G. Medical students' understanding of directed questioning by their clinical preceptors. *Teach Learn Med*. 2017;29(1):5-12. doi:10.1080/10401334.2016.1213169

12. Detsky AS. The art of pimping. *JAMA*. 2009;301(13):1379-1381. doi:10.1001/jama.2009.247

13. Leary JC, Schainker EG, Leyenaar JK. The unwritten rules of mentorship: facilitators of and barriers to effective mentorship in pediatric hospital medicine. *Hosp Pediatr.* 2016;6(4):219-225. doi:10.1542/hpeds.2015-0108

14. Atkinson A, Watling CJ, Brand PLP. Feedback and coaching. *Eur J Pediatr.* 2022;181(2):441-446. doi:10.1007/s00431-021-04118-8

advancing the art & science of medicine in the midwest

WMJ

WMJ (ISSN 2379-3961) is published through a collaboration between The Medical College of Wisconsin and The University of Wisconsin School of Medicine and Public Health. The mission of *WMJ* is to provide an opportunity to publish original research, case reports, review articles, and essays about current medical and public health issues.

Visit www.wmjonline.org to learn more.