Between Two Worlds: A Multi-Institutional Qualitative Analysis of Students' Reflections on Joining the Medical Profession

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BACKGROUND: Recent changes in healthcare system and training mandates have altered the clinical learning environment. We incorporated reflective writing into Internal Medicine clerkships (IMcs) in multiple institutions so students could consider the impact of clerkship experiences on their personal and professional development. We analyzed student reflections to inform curricula and support learning.

METHODS: We qualitatively analyzed the reflections of students at 3 US medical schools during IMcs (N=292) to identify themes, tone, and reflective quality using an iterative approach. Chi-square tests assessed differences between these factors and across institutions.

FINDINGS: Students openly described powerful experiences. Major themes focused on 4 categories: personal issues (PI), professional development (PD), relational issues (RI), and medical care (MC). Each major theme was represented at each institution, although with significant variability between institutions in many of the subcategories including student role (PI), development-as-a-physician (PD), professionalism (PD) ($p<0.001$). Students used positive tones to describe student role, development-as-a-physician and physician–patient relationship (PD) ($p<0.01$–0.001), and negative tones for quality and safety (MC) ($p<0.05$). Only 4% of writings coded as professionalism had a positive tone. Students employed a "reporting" voice in writing about clinical problem-solving, healthcare systems, and quality/safety (MC).

DISCUSSION: Reflection is considered important to professional development. Our analysis suggests that students at 3 institutions reflect on similar experiences. Theme variability across institutions implies curricula should be tailored to local culture. Reflective quality analysis suggests students are better equipped to reflect on certain experiences over others, which may impact learning. Student reflections can function as a mirror for our organizations, offer institutional feedback for support and improvement, and inform curricula for learners and faculty.

Preliminary findings were presented at the plenary session of the National Meeting of the Clerkship Directors in Internal Medicine, October 2007, Pittsburgh, PA.

KEY WORDS: medical education; clinical learning environment; qualitative analysis; students' reflections; physician–patient relationship.
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BACKGROUND

The exponential growth of scientific research in recent decades has led to unprecedented advances in medical knowledge and potential medical interventions. Incorporation of this material into curricula has led many to question whether medical school overemphasizes memorization and accumulation of factual knowledge with little time for reflection on students' experiences and processes of learning. Medical education has been criticized for promoting too much "unreflective doing",[7] which is especially problematic as reflection (contemplation)[1] is important to learning and professional development in many fields.[2–6]

Increasingly, medical schools have developed programs promoting the integration of humanities and reflection within curricula to deal with these concerns[8–10] These efforts have taken many shapes including parallel charting, portfolios, learning communities, blogs, discussion groups, and creative arts projects.[11–14] Many are included in voluntary and preclinical experiences.

Several authors have attempted analysis of the themes of these reflections and concluded that they can help students to reconcile conflict[13] and support student reflection on the process of professional development.[11] These prior studies set a superb foundation, but were based on the work of students at single institutions, possibly limiting generalizability. Also, recent national emphasis on patient safety[15] and the structure of clinical training[16] have changed the atmosphere in which clinical medical students are learning, and might likewise affect the topics of student reflections. The purpose of our work was to identify themes of student reflections on their experiences in the Internal Medicine (IM) clerkship, determine whether new themes were developing given changes in the structure of their learning environment, and whether these themes were consistent across multiple institutions. A secondary goal was to assess the tone and reflective quality of their writing, and explore relationships to the themes described.

School	Assignment
University of Chicago	'Enforced Reflection' -- at some time during the next three months I would like you to choose a patient that taught you something and write about him or her. You could write about anything. You could write about a case that taught you something medically. You could write about something you learned about the doctor-patient relationship, about patients' responses to disease or about your interaction with the specific patient. Anything.
University of Florida	Pick something that has affected you strongly whether good or bad during medical school. Briefly describe it (protecting privacy when needed) then reflect on why you think it affected you so much and comment on how it will change your practice in the future.
University of Massachusetts	Please reflect on your experience in the Internal Medicine clerkship to date. You may describe a specific critical incident, patient encounter, personal/professional development or any other topic that you wish to examine in more detail. Please remove any identifiers to maintain patient confidentiality.

Text Box 1. Student Assignments

METHODS

Students enrolled in IM clerkships at 3 geographically diverse university-based medical schools completed reflective writing assignments as a clerkship requirement in the 2005–2006 academic year. Writing assignments were open-ended and comparably structured (see Text Box 1). In 2 clerkships, essays were reviewed by clerkship directors and shared in small group discussions with faculty facilitators and other students. At the third institution they were turned in to the clerkship director after the conclusion of the clerkship. Students were encouraged to share writings with other teaching faculty. A total of 292 papers were de-identified and coded using grounded theory. Initial themes were selected from relevant literature and investigators' experiences in reading reflective work and involvement in student education for 5–19 years. A preliminary coding framework was developed and tested by 6 authors (EA, AC, MF, HH, DH, KJ) who independently coded 63 transcripts. Authors met in pairs to discuss individual coding and discuss coding differences. Topic lists, coding methods and data collection tables were revised. The final coding framework was tested by the same 6 authors on 30 randomly selected passages to confirm understanding and agreement of categories. Once agreement was obtained on these codes, all 292 essays were coded by 1 author (HLH) with discussion of uncertainty and periodic random confirmation by the primary author (MF) who also read all essays. Discrepancies in final coding were resolved with open discussion of the entire essay by these 2 authors. We estimate that 15% of write-ups received this second level of discussion or random review.

The coding framework identified major themes, tone, and reflective quality (engaging in deep consideration, insightful, more complex or evaluative, compared to superficial, objective reporting with little critical consideration). Our major themes assumed an empiric structure that parallels the lives of our students: personal, professional, relational, and the health care system. Because the student is the centerpiece, one could argue that all themes belong in the "personal" category, or because students are all learning to be doctors one could argue that they all belong in the professional development category, etc. We agreed on the final structure to offer readers a framework for absorbing this comprehensive yet comprehensible number of themes. In cases where a topic could be coded in 2 related themes we looked to the overall content and degree of reflection devoted to each aspect of the topic before assigning codes.

Relationships between themes, tones, and reflective quality, and differences across institutions were assessed with chi-square tests. Only themes identified as a major component of writing were coded. Research was Institutional Review Board (IRB)-exempt as a component of educational program evaluation at each institution.

FINDINGS/RESULTS

Distribution of students, themes, tones, and reflective quality are listed in Table 1. Major themes were separated into 4 categories: personal issues (personal insight and impact, student role), professional development (clinical problem-solving, development as a physician, professionalism), relational issues (patient perspective, communication with patients and families, physician–patient relationship), and medical care (death and dying, patient and family experience of illness, health care systems, quality, and safety). Themes and sample quotes are included in Table 2. Importantly, each major theme was represented at each institution (Table 1), although there was significant variability in discussion of the subcategories of student role, development as a physician, professionalism ($p<0.001$); clinical problem-solving, patient communication ($p<0.01$); death and dying, health care systems ($p<0.05$). About half (141) of essays were coded with more than 1 major theme (range 1–5). There were no significant differences in themes described by the timing of student rotations.

Table 1. Distribution of Themes, Tone, and Reflective Quality Including Distribution of Tones by Theme and Distribution of Themes by Level of Reflection

		Institution			Tone		Level of Reflection	
Theme	Total %	Inst 1 %	Inst 2 %	Inst 3 %	% Negative	% Positive	% Reflective	% Reporting
N	292	90	118	84				
Personal issues:								
Personal insight and impact	11.0	12.2	11.0	9.5	66.7	33.3	81.8	18.2
Student role***##	20.9	10.0	12.7	44.0	36.1	63.9	60.7	39.3
Professional development								
Clinical problem-solving+++	13.0	18.9	11.0	9.5	50	50.0	28.9	71.1
Development as a physician***###+	17.1	7.8	15.3	29.8	28	72.0	76.0	24.0
Professionalism***###	9.2	2.2	16.9	6.0	96.3	3.7	66.7	33.3
Relational issues								
Patient perspective	15.1	15.6	17.8	10.7	66.7	33.3	73.3	26.7
Communication with patients/families*	18.2	10.0	25.4	16.7	57.4	42.6	61.1	38.9
Patient–physician relationship###	15.8	16.7	11.0	21.4	29.8	70.2	61.7	38.3
Medical care								
Death and dying*	15.8	7.8	22.0	15.5	69.6	30.4	60.9	39.1
Patient/family experience of illness	14.7	17.8	14.4	12.4	56.8	43.2	65.9	34.1
Health care system*++	9.9	3.3	11.9	14.3	72.4	27.6	34.5	65.5
Quality and safety#++	4.5	5.6	5.9	1.2	84.6	15.4	23.1	76.9
Percent positive tone	45.5	53.8	32.9	55.9				
Percent reflective***	60.7	52.1	65.2	60.9				

*Significant difference by site: *p<.05, ** p<.01, *** p<.001*
Significant differences by tone: #p<.05, ## p<.01, ###p<.001
Significant differences by level of reflection: +p<.05, ++p<.01, +++p<.001

PERSONAL ISSUES

Students openly described parallels of patient illness to their own lives, discussing how similarity of illness or dependency may reopen old wounds, help with their own healing or challenge their abilities to overcome personal bias and experience in patient care. They wrote about coping with the medical school experience and trying to balance their personal and professional lives as each bled into the other. Not surprisingly, some of them focused on the role of the student in caring for patients and in being the "lowest" member of the medical team totem pole. They described their ability to take more time with patients, and to make a real difference in patient care despite the limitations of their knowledge and experience. Students also described the power and motivation of learning from patients, rather than books and the conflicts they felt in being invited into these intensely personal experiences with people in vulnerable positions. Some students discussed their own development as they learned to learn in this new environment, and dealt with the insecurity and growth that their experiences engendered.

PROFESSIONAL DEVELOPMENT

Many students considered the acquisition and application of clinical skills. They described the joy of clinical problem-solving, honing skills, and making diagnoses. Descriptions of memorable cases abounded. Some students explored the concept of how to treat patients professionally. They described the importance of focusing on the patient rather than the diagnosis, respecting and following patient wishes that might conflict with their own, and the dangers of incorporating stereotypes into their interactions. Some described working at odds with patients or families, with their own sense of ethics, and how they relied on professional behavior to resolve this discord. Other students wrote about the course of their own professional growth focusing on team relationships and role modeling.

RELATIONAL ISSUES

Many students discussed challenging patient interactions, highlighting critical aspects of the physician–patient relationship including compassion, trust, and empowering patients. Whereas many experiences were positive, a number of students wrote about disturbing role modeling of the doctor–patient relationship, and the challenge of maintaining student idealism in situations that tested their personal images of medicine. In some cases, these were individual instances, but in others they were felt to reflect the very culture of an organization.

MEDICAL CARE

Students approached death and dying from many angles including acknowledging and coping with the inability to save some patients, discomfort with their own emotions, and role with dying patients and their families, and the difference between helping and saving. In some cases, they explored the challenges of decision-making at the end of life, and expressed unease with the degree of personal responsibility for life and death decisions. It is troubling that, whereas some students provided textbook examples of how to debrief with a team after a patient died, others reported a lack of any dedicated team or individual discussion. Relatively few students wrote about actual medical codes, and they tended to note their discomfort with or lack of a clear role in these situations.

Table 2. Themes and Representative Quotes

Themes	Quotes
Personal Issues (personal insight and impact, student role)	"It had been a long time since I had thought about my grandmother and what I had seen in that patient's room brought me to uncontrollable tears. These were two completely different people in two completely different places…dying from the same disease…what I witnessed in that room in many ways helped me obtain a sense of closure with my grandmother's death." "I was wary of taking on this type of patient. I have struggled with a family member who is a drug addict, and on too many occasions I have been frustrated, saddened, infuriated, and deeply disappointed by this person's behavior…I did not think that I would be able to offer empathetic, non-judgmental care [to addicts]." "So often as a student, I feel like the "real" burden is not on me...but I realized that what I do every day DOES matter, and the impact I can make, even as a student, is very real." "I honor the privilege of this involvement and with certain cognitive discord feel thankful for it. I feel guilty being invigorated by such experiences, but at the same time feel appropriate."
Professional Development (clinical problem-solving, development as a physician, professionalism)	"What I saw next amazed me. My resident broke the horrible news to the family with a profes -sionalism and compassion that I had never seen before. I was in awe at her ability to hold it together in the face of that pressure and wondered to myself how I would ever be able to do what she did." "As I walk in the room I feel conflicting emotions. On one hand I want to get her to consent—score one for the team, impress my resident and attending and help move the medical plan forward with her. On the other hand I feel a surprisingly strong emotion toward Ms. F, almost as if I want to protect her and her interests."
Relational Issues (patient perspective, communication with patients and families, physician–patient relationship)	"He had no one to turn to and here he was, helpless and confiding in a complete stranger. This experience was a reminder to me of the awesome responsibility and privilege it is to work in our profession." "In this situation it felt as if there was a better way to show empathy; to communicate with the patient and to be respectful of his privacy…hearing that I have cancer in front of 10 relative strangers; fighting back tears in front of 10 sets of eyes; would rank among the less desirable ways [to hear bad news]."
Medical Care (death and dying, patient and family experience of illness, health care systems, quality and safety)	"What struck me the next day was that my team barely talked about it…I wasn't there [the day he died] and I needed more than 'oh, you know that 'H' died?' Somehow, I thought that we as a team would all sit down and talk about him and what we could have done, if anything. I thought we were going to learn from how he died. I quickly figured out that there wasn't any room for that… This was the story of my first experience with a patient death. It was one of the saddest days of my life." "I also learned about the system, that being a doctor can't just be about sitting in a hospital, giving orders and expecting results…it has to be about how to get them that test, get them that medication, that treatment. How to work within the system we have." "Many times when you make a mistake, it is first instinct to say to yourself, that you won't make that mistake again. Or that you'll just work harder next time…saying that you'll work harder does not solve the problem of systematic error. One should always keep in mind that building systems to avoid errors is going to save more mistakes than 'working harder.'"

Our students also wrote about their introduction to working within the health care system. They discussed processes of care and navigation through complex levels of hospitals and support systems. They astutely delineated the fragmented climate in which they were working and learning and the impact of these experiences on patient care. Quality of care and patient safety have become more visible elements of our practice, and it is not surprising that students included this topic in their writing. They discussed hypothetical, near-miss, and actual mistakes and learning from these experiences.

TONE

Our work included coding of tone of student writing. Positive tones included eager, compassionate, proud, excited, hopeful, and impressed. Negative tones included angry, disillusioned, frustrated, fearful, tragic, overwhelmed, sorrowful, and helpless. Student role, development as a physician and physician–patient relationship were written in mostly positive tones ($p<0.01$–0.001), whereas quality and safety and professionalism were written in more negative tones ($p<0.05$–0.01; Table 1). Only 4% of essays coded with the theme of professionalism had a positive tone. Healthcare system essays were more negative in tone as well, but this was not statistically significant.

REFLECTIVE QUALITY

Essays were analyzed regarding the degree of reflection represented in the work. "Reflective" essays were those that displayed insight and demonstrated depth of consideration, problem-solving, or learning from a situation. "Reporting" essays were written on a more superficial level with detachment and lack of depth or critical analysis. Students tended to use a "reporting" voice when writing about clinical problem solving, the health care system, and quality and safety (Table 1).

DISCUSSION

We report themes from the reflective write-ups of 292 Internal Medicine clerks. To our knowledge, this is the first multiinstitutional, systematic evaluation of such reflective writings. Our qualitative work shows that students addressed the same themes regardless of institution. However, institutional indi-

viduality in theme preponderance suggests that local culture plays a significant role in student experiences. Institutions may be able to use students' work to explore their own cultures, support positive models, or develop responses to problematic behavior.

Our students wrote about previously described themes that could be expected from those entering the uncertainty of clinical practice from the relative safety of the classroom. They eloquently described the challenges of learning from people who are ill, the impact of these experiences on their personal lives and professional development, and the power of the physician–patient relationship. They struggled to assimilate experiences with medical care and the medical system into their lives.

We also identified themes not explicitly described in prior work—health care systems, quality, and patient safety. These themes seem to parallel efforts of regulatory and advisory agencies as well as institutions nationally. In those essays students addressed the challenges of providing care to patients in a fragmented health care system. Our analysis shows that writings on health care system topics both used more negative tones, and were less reflective in nature. It is unclear whether this is related to characteristics of students who explored these topics, or the topics themselves. One explanation may be that we do not prepare our students to think about these topics in depth. Whereas we have identified them as important to training and practice, safety and quality issues may be considered rote administrative tasks. This may limit students' ability to consider them more critically or integrate these principles into their own practice. Curricula similar to those that emphasize patient-specific guideline implementation may be necessary to help learners consider systems issues more deeply. Further analysis of these essays may help to inform such curricula.

Like previous authors, we were particularly disturbed to read multiple student descriptions of unprofessional behavior by faculty and house staff. These examples demonstrated great openness and depth of student reflection. Our student writings suggest that humanism in medicine curricula, often emphasized in the preclinical years, may not be supported through clinical practice. Resident and faculty development may be necessary to achieve these goals more broadly.[17,18] Incorporation of student writings could be of great use to medical schools in this process. Authors have de-identified student essays and incorporated them into institutional learning in areas such as feedback to deans, residency directors, and institutions; development of competency-based curricula on professionalism for students; medical grand rounds. We see further opportunities in developing and evaluating professionalism curricula for house staff and faculty and informing patient safety and quality curricula.

Despite our enthusiasm for reflective writing, we do not have a measure of student learning from this experience. Such a metric should be pursued; however, our experience with more formal evaluation of similar writings suggests students are averse to the process. It remains unclear whether the writing of reflections facilitates the act of reflecting on the students' part, or whether students already reflect and we merely learn about it through their writing. Student comments imply that both occur, and clerkship sessions involving discussion of student work are highly rated. At 1 institution the exercise receives a 4.6 of 5 on a Likert scale, with 50% of students citing this reflective writing as the most valuable aspect of a portfolio. At another, 77% of students rate the exercise as at least "helpful". Many students have written comments such as "at first it seemed to be a great deal of excess work…in the final analysis I feel as though this was the most worthwhile exercise we undertook this semester." Some others have said "I know these exercises can be a valuable way for some people to open up, but I find them intrusive."

Our reflective writing occurs at 1 point in a single third year rotation; however, we believe that this should be an ongoing activity, and students frequently suggest this as well. Our positive student responses suggest this could be well received at other times. At 1 institution we have asked students to reflect at 3 points in their learning, preclinically and clinically, and future research will attempt to describe the transitions in themes they discuss. At another, student requests prompted a similar exercise in another clerkship.

Challenges to implementing reflective writing are shared by other educational innovations and include student and faculty buy-in, protected time, and clarity of purpose. Whereas most students value the experience, some balk at the work, complaining that it takes them away from "more important" tasks like reading about pathophysiology and treatment. In each institution, we have adjusted the way that we use the student work over time. In all sites, we have incorporated reading and discussion of the students' essays in facilitated small groups. In this way, we provide clerkship time to share reflections, help students learn from faculty experience, and encourage learning from peers.

This study has several potential limitations. Writings were from a single clerkship, and exercises from different clerkships or years of school may yield different results. Although we included work from 3 geographically diverse university-based medical schools, findings may not generalize to all institutions. We based our coding on both review of the published literature and extensive personal experience, but qualitative coding may always be inadvertently influenced by the bias of the coder. To reduce this bias, we tested our themes and coding methods extensively and selected a PhD-level researcher with prior experience in qualitative analysis, but little work with this specific topic, to perform final coding.

CONCLUSION

We present systematic qualitative analysis of the reflective writing of 292 IM clerkship students from 3 university-based institutions. We provided this experience to offer students time to consider the impact of clerkship experiences on their learning, personal, and professional development. We have subsequently used the work in clerkship and institutional learning. Analysis of student reflections shows that our learners continue to grapple with aspects of clinical medicine that have challenged providers for decades and are also dealing with more recent concerns confronting providers, including issues of patient safety and quality of care. The "reporting" nature in which they write about these latter topics suggests we may not be addressing them in ways that maximize student learning.

Student reflections may function as a mirror for our organizations through which we can improve culture, professionalism, and systems of practice. Our combined experiences

suggest that these writings provide a substrate for faculty and institutional development, and for student curricular enhancement. We recommend that programs offer students opportunities to share these writings to maximize learning.

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