

Student perspectives on assessment: Experience in a competency-based portfolio system

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Abstract

Despite considerable evidence recognizing the importance of learners' perceptions of the assessment process, there is little literature depicting the participants' experience. We aim to capture these perceptions in order to gain insights into the strengths and weaknesses of a competency-based assessment system. Cleveland Clinic Lerner College of Medicine has implemented a learner-centered portfolio assessment system built around competency standards and continuous formative feedback. Promotion of students is based upon their feedback-supported portfolio essays, but feedback itself is individualized and formative in nature under the umbrella of the competencies. Importantly, there are no grades or ranking awarded for the competencies or at promotion. Four students share personal reflections of their experience to illuminate themes from the subjective experience of the learner and to understand how to align the learners' interests with the requirements of an assessment program.

Introduction

The voice of the learner is remarkably silent in the assessment literature (Cilliers et al. 2010). If the focus on reliability and validity in testing is any guide, this silence may reflect the large degree to which assessment has been driven by administrative needs to determine promotion or dismissal decisions and to choose among candidates for training positions. Whatever the reasons for the longstanding silence, the role of assessment as a means of helping learners take responsibility for their own learning has gained attention with the shift to competency-based education (Harden & Shumway 2003; Holmboe et al. 2010; Schuwirth & van der Vleuten 2011).

Accumulating evidence suggests that the learner's subjective experiences and perceptions of assessment have implications for the acceptance and use of feedback. Emotional reactions to feedback clearly play a role in the self-assessment process and can lead to denial or acceptance of the need to make changes (Mann et al. 2011; Sargeant et al. 2011). Learners are also influenced by the usefulness of the feedback and the perceived engagement and credibility of the assessor (Watling & Lingard 2010; Sargeant et al. 2011). Response to feedback also appears to depend on the consequences of assessment, particularly in relation to summative assessments (Cilliers et al. 2010). Assessment, of course, takes place within a context, and learners' responses are shaped by judgments they make about the perceived value placed on assessment within an educational program (Watling & Lingard 2010). Thus, when designing and evaluating a program of assessment, learner perceptions are critical to take into consideration (van der Vleuten et al. 2012).

Practice points

- The design of an assessment program can facilitate students taking responsibility for their learning.
- Continuous feedback in a competency-based system allows students to monitor their performance.
- Writing portfolios based on feedback engages students in assessing their own performance.
- Eliciting student perspectives provides useful information when evaluating an assessment program.

This article gives voice to four learners in Cleveland Clinic Lerner College of Medicine's (CCLCM) competency-based assessment system which was designed to promote habits of self-regulation and reflective practice (Dannefer & Henson 2007; Fishleder et al. 2007). Rather than provide grades for external confirmation of progress, continuous formative feedback allows students to monitor performance, competency standards provide benchmarks for self-assessing performance, and required learning plans promote self-regulation. Importantly, trained advisors provide support in this process. For many students in the program, this learning environment represents a significant culture shift.

The program's nine competencies provide a continuum of progressively demanding performance standards across the curriculum. Curricular learning experiences and related assessments are closely aligned with the competency standards (Baartmann et al. 2006), ensuring that students will have adequate evidence to make judgments about their performance. All assessments are formative and collected from a range of sources and contexts. A template for soliciting

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narrative descriptions of observed competency behaviors for both areas of strength and targeted area for improvement is used across all contexts.

A trained physician advisor is assigned to each student to serve as coach in the assessment process. Students and their advisors have immediate access to electronically collected assessment data to monitor performance and to use for dialogue about performance during regularly scheduled meetings. Periodically, students construct formative portfolios composed of essays self-assessing their performance in the competencies and self-selected assessment evidence to support their judgments. The portfolios are reviewed by and discussed with their advisor and learning plans developed, which are then monitored and progress reported in the next portfolio. As students enter the clinical and research years, the structured formative portfolio is replaced with bi-annual learning plans reviewed in meetings with their advisor.

At the end of each year, students construct summative portfolios that are reviewed by a promotion committee to determine whether or not the level of achievement is sufficient for promotion to the next year. Remediation is viewed as a means of helping students achieve the competencies standards rather than as punishment for poor performance. Thus, the system's structure and educational culture support the development of reflective practice habits.

Student experience

Four students who participated in a panel presentation on CCLCM's portfolio-based assessment system agreed to share their "personal reflections on [their] experience in the CCLCM assessment system" and were advised that "specific transitions in [their] thinking about learning and assessment might be of particular interest," but were not otherwise coached. Their personal stories are very much about their emotional response to losing the anchor of external validation in the form of grades and adjustment to accepting and using multi-source feedback. While uniquely personal, their narratives contain similar threads and are consistent with data collected through graduate exit interviews and informal communications. After reviewing their stories, we grouped similar portions of their stories under common headings.

Training wheels: introduction to the portfolio system

Students detail uncertainty upon transitioning into a competency-based assessment system.

Student 1. I have always been a pretty good test-taker, and that served me well to get good grades throughout my educational career. Of course I still loved learning, but I also appreciated the process of proving it to myself. So it was with a certain degree of reluctance that I began medical school under the portfolio evaluation system. Surely, medical school was the highest level of intellectual rigor I had encountered, and I was ready to prove myself. But I was worried; instead of taking a test and getting a grade like I was used to, I was

supposed to reflect on feedback in order to find ways to improve.

My first few weeks in those small groups, I did what I knew how to do: show how much I know. I both succeeded and I failed in those first weeks. I succeeded in relaying my knowledge, but failed at getting the point. Feedback for my knowledge level was overwhelmingly positive, but it quickly became clear I had room to improve in many other required competencies, from communication to professionalism. This was a new ballgame.

Student 2. Upon entering medical school, I very quickly appreciated how different the portfolio-based assessment process was compared to my undergraduate grade-based assessment. Grades provided an objective, quantitative number or letter that indicated my standing, whereas the portfolio-based system provided more subjective, qualitative feedback. Initially, I was skeptical of this new system. Primarily, I was concerned that feedback would be insufficient to satisfy my concerns of whether I was learning enough and progressing as a student-physician. However, faculty members and older students continually encouraged me to "buy into the system," to go through the motions in hopes that my efforts would pay dividends in the end.

Student 3. Prior to entering medical school, the majority of feedback I received regarding my academic performance took the form of letters or numbers designed to quantify my achievement. I had always done well academically and therefore spent little time thinking critically about gaps in my performance...

It was initially difficult to see my weaknesses highlighted by faculty and colleagues. Beyond the receipt of feedback, attempts at interpretation were at first overwhelming. When I wrote my earliest Formative Portfolio, I recall acknowledging each sentence I had received with the intent to continue all that was deemed strong and to address all areas worthy of improvement. Review of this portfolio with my physician advisor subsequently took hours as he explained the importance of searching for patterns in feedback and making judgments about the need to change. I quickly realized that effective use of our portfolio system was a skill that, like any other, would require a great deal of practice.

Student 4. When I first started at CCLCM, I really had no understanding of the approach other than it was not test-based. However, I knew enough to recognize that, without a final grade as a goal, I would have to depend my own personal motivation for learning, and that this approach to medical school had the potential to develop my skills in more ways than simple rote memorization.

As a first year student, I will admit that I struggled a little bit with the concept of the portfolio; hearing the system described is quite different from functioning within it. Therefore, when I sat down to assemble my first portfolio, I was overwhelmed. Sorting through my numerous feedback forms was a daunting task.

Learning to ride: acceptance and use of the system

Students detail the process of learning to accept and best utilize feedback.

Student 1. As was the design of the portfolio system, I started targeting areas to improve upon with specific plans, even if just for the sake of improving my feedback. I listened a little more and interrupted a little less. I used new methods to make my presentations clearer and more succinct. I communicated better, even if it was as simple as remembering to speak up, or to keep quiet. Lo and behold, the group dynamic improved.

These small improvements continued, but when forced to put it all together for a summative portfolio, I found myself reflecting upon it on a larger scale. What type of doctor and person I would strive to become? My attitude on feedback shifted from the criticism to the constructive. The system seemed to be working for me to improve on many aspects of becoming a doctor that would not necessarily have been addressed otherwise. Even when students' collective insecurities regarding our knowledge swelled as the USMLE approached,... the doubts were washed away when most still did remarkably well. Few, if any, believed their knowledge to be lacking in breadth or depth afterwards.

Student 2. I came to appreciate the portfolio-based assessment system over time. By receiving targeted feedback in lieu of a sterile number or letter grade, I was better able to understand and accept my strengths and weaknesses. This approach instilled a sense of humility and balance: there were always areas where I excelled, and likewise there were always areas that needed improvement. Also, receiving feedback helped to bolster my self-reflection skills. Receiving feedback was only the beginning, not the end, of the reflective process. The comments in my feedback were merely starting points for further introspective reflection.

Beyond the personal benefits of receiving feedback, I feel that I also benefited by learning to provide feedback to others in an honest yet respectful manner. I learned to not only focus on areas of strength and weakness, but also to provide specific examples to illustrate my points. Additionally, I would frequently provide ideas for how to improve specific areas, or how to build on areas of strength. I tried to provide the same quality of feedback that I would have wanted to receive from my peers.

Student 3. With time and practice, I learned to accept and value constructive feedback. By the end of my first year, I felt comfortable interpreting this feedback and presenting it as evidence for achievement or as the foundation for my personalized learning plan. In addition, I realized during my first year of medical school that the portfolio process was one that required constant immersion. Early on, it was tempting to leave feedback until a formal due date was near, much the way I had approached exam preparation in a more traditional system. However, the circle of collecting and interpreting feedback, devising a learning plan, carrying out this plan, and evaluating whether or not goals were achieved was much too lengthy to initiate at the last minute. I ultimately found that the

system was most useful when considered on a frequent basis with this attention summarized in the written portfolios.

Student 4. In the end I managed to get myself organized, and overall the struggle was a valuable experience that reconstituted the concept of the portfolio for me. I realized that the most manageable, and also most effective, way to approach this style of learning was to read over and carefully reflect on each piece of advice that I received as I received it, rather than leaving everything to the end. In that way I would be able to build upon the constructive criticisms so that I could improve continuously, rather than only at set points throughout the year. It also helped me to recognize my strengths, which I could learn to rely on as I developed my skills in other areas. Over the subsequent years of medical school, I took this realization to heart and made it a daily practice to check my portfolio for feedback and reflect critically on what I received in an effort to better myself as a developing physician. In this manner, I feel like I have had more meaningful and productive experiences in the classroom and on the wards.

Removing the training wheels: transition to a self-motivated approach

Students describe their transition from reliance on a structured assessment system to personal accountability in their education.

Student 1. From there on, I felt free to embrace the portfolio system. The truth was I was no longer proving things to myself. I was simply improving myself. As I moved through my clinical years, I found my entire approach to my education had changed. I was even actively seeking feedback and acting on it without prompt from the system. This approach in itself was received well by all those around me and resulted in overwhelmingly positive interactions. In my previous education and as an undergraduate, I had always heard that things would be different when I got "out into the real world." I always found that silly because I believed that the point of the educational experience was to equip me for the world. In the portfolio system, I have discovered how to learn from the world in order to equip myself for whatever is to come.

Student 2. As I continued to develop in this program, my approach to learning also changed as a result of the curriculum. In previous grade-based systems, I found myself slavishly studying material that was assigned by the professor in order to get a high letter grade or percentage on the next test. However at CCLCM, by avoiding a preoccupation with tests or grades, I began to view learning as an opportunity rather than a mandate. I knew what I needed to learn, but I also had the freedom to study peripheral topics that I felt were important. Additionally, the mutual interdependence that was established with my peers in problem-based learning sessions encouraged me to learn for their sake. Rather than simply memorizing the specifics needed to pass a test, I found myself digging deeper, trying to "get the big picture." Based on feedback from peers and faculty, as well as my USMLE Step 1

score, I am confident that I sufficiently learned what I needed to, and much more.

Student 3. Repetition of these steps during my first 2 years prepared me well for use of the portfolio in a less structured clinical environment. Instead of using curriculum due dates as guidelines, I began to use my own gauge for continued movement through the system. In addition to requesting written feedback, I found myself verbally requesting feedback from residents and attending physicians at the midpoint and end of each rotation. In addition, I shared areas of performance that I planned to work on improving at the start of each rotation so that those supervising were able to comment on my progress. Although my initial goal was to become skilled in the use of our portfolio system, I now view this as a tool that fostered my development toward becoming a reflective practitioner.

Student 4. At this point in my education, 5 years after I first engaged in the portfolio-based system, I have come to rely on the feedback that I receive; the written comments I received from my residents and attendings are a much better barometer of how I am performing and what I can work on than any grade might be. In fact, during a recent visiting elective at an outside program, I made an extra effort to practice this approach despite that program's grade-based system. Although the forum for frequent written feedback was not in place, my experience within the CCLCM system had made me confident and comfortable enough to seek verbal critiques, which helped me improve my performance and gain significantly more from that rotation than I otherwise might have.

Discussion

The goal of presenting these students' subjective experiences was to shed light on how assessment systems may affect learners' approach to medical education and to raise potential questions for future research. Not surprisingly, certain common themes emerged from the students' narratives. These themes included the challenges of transitioning from a grade-based to a portfolio-based system, an embrace of constructive feedback, and an ultimate shift toward active, self-directed improvement.

It was somewhat surprising to find that our students' initial skepticism with the portfolio system was primarily due to the lack of grades, rather than any intrinsic concerns about the portfolio-based approach. Seemingly, the students were open to utilizing a novel feedback system, but were initially quite hesitant to let go of "objective" measures of their performance. However, some student's stories have put forth that the lack of grades was in itself a catalyst for internalizing the reflective approach to the feedback system. Student 2, for instance, notes that with the loss of grades he "began to view education as an opportunity rather than a mandate." Student 3 similarly addressed the shift from external to internal motivation by commenting that, "instead of using curriculum due dates as guidelines, I began to use my own gauge for continued movement through the system." All four students

independently indicated that the portfolio system had enhanced their education in ways that prior grade-based systems had not, particularly concerning self-reflective skills.

Students do note that the process of the portfolio system in itself aided the development of reflective practice, independently of the presence or lack of grades. Although in some instances, it also appeared that this process was enhanced secondarily by the lack of a grade-based system due to increased dependence upon feedback to assess performance. It is also interesting that more than one medical student cited their score on the USMLE Step 1 exam as further evidence of the success of this non-test-based portfolio system. It appears that successful Step 1 scores quelled what Student 1 described as the "students' collective insecurities regarding [their] knowledge" in the portfolio system. The students who mentioned the exam noted that it gave them confidence in the knowledge they had gained during the first 2 years of medical school. In this respect, the "grade" assigned on the USMLE actually reaffirmed student perspectives on the portfolio process.

The transition toward acceptance of the portfolio system for the students developed after learning to embrace critical feedback. Universally, students described a reframing in their view of feedback once they had "gone through the motions" of the portfolio system. This reframing involves a positive shift from "deficit thinking" to "proficiency strengthening." All four students cited receiving scheduled feedback and the writing of the first portfolio as a time where they learned to not only manage their feedback, but reflect on it. Student 3 explicitly identifies the challenges of overcoming the mentality that all criticism was punitive. Likewise, several students discussed the process of learning how to identify and respond to constructive feedback. Highlighted methods included identifying trends in feedback rather than focusing on individual comments, reflecting on feedback on a regular basis, and making targeted plans for improvement. Student 2 also notes that these same methods were useful in learning to provide valuable feedback to others. We use the metaphor of "training wheels" on a bicycle to describe the process by which the portfolio system aides in the internalization of the reflective approach to feedback. In this scenario, the system provides a framework for which to practice this reflective approach, which would ideally become second-nature as the "training wheels" are removed.

One unexpected finding, however, was that students hardly addressed the competencies of the assessment system despite the large role they play in providing the structure of the portfolio process. Student 1 was the only student to address competencies; it was largely in passing indicating that feedback helped identify a broader spectrum of education than he was used to. Whether the competencies are important for the internalization of the reflective process is unclear from these narratives. One possibility is that the competency definitions do not play an important role in the students understanding of the reflective process. Also possible is the "wheels are off" theory that students have indeed internalized the competency approach to broaden the spectrum of their educational goals, but have become accustomed to integrating these broad goals such that they have dropped the borders within the

competency labels. Indeed, students identify the process as broadening their perception of what medical education is.

Each story cites the role of the portfolio system in reshaping their educational approach during the first few years of medical school. The students also detailed how they learned to maintain these reflective habits when the structure of the portfolio system decreased during the latter years of medical school. The structure during the initial years allowed the students to operate independently from the structured portfolio system as they progressed through school. Students who had completed clinical rotations described actively seeking both written and verbal feedback from residents and attendings. Specifically, students mentioned their efforts in seeking targeted feedback for areas of self-improvement from clinical mentors at the start of clinical rotations, continually pursuing feedback throughout rotations to gauge progress, and even using this approach in institutions where minimal feedback was the norm. Additionally, several students highlighted their perceived benefits of actively seeking feedback, such as improved clinical performance and positive interactions with residents and attendings. Importantly, the students collectively observed that reflecting on their feedback allowed them to gain deeper insights into their careers and themselves.

These narratives give insight to the challenges and goals of four students as they progress through a competency-based portfolio system. While these students appreciate the role of the portfolio process and formative feedback in the internalization of reflective practice, it remains unsettled what role the competency platform of the portfolio system plays in the reframing of students' "deficit thinking." Debatably, the role may be of broadening the student perceptions of what medical education entails. Similarly, while it is clearly an important factor in how the students approach their education, the effect of grades on students' approaches to feedback and the portfolio in a competency-based system must be further elucidated. In these narratives, a lack of grades seemingly created a void for these students to embrace the process, but the grades received on standardized tests reaffirmed the process's value. Whether the reflective skills developed in medical school are maintained in residency and beyond remains a question. While objective measures of these practices are lacking, the narrative approach provides a valuable insight to the perspective of the learner.

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References

- Baartman LK, Bastiaens TJ, Kirschner PA, van der Vleuten CPM. 2006. The wheel of competency assessment: Presenting quality criteria for competency assessment programmes. *Stud Educ Eval* 32(2):153–170.
- Cilliers FJ, Schuwirth LW, Adendorff HJ, Herman N, van der Vleuten CP. 2010. The mechanism of impact of summative assessment on medical students' learning. *Adv Health Sci Educ* 15:695–715.
- Dannefer EF, Henson LC. 2007. The portfolio approach to competency-based assessment at the Cleveland Clinic Lerner College of Medicine. *Acad Med* 82(5):493–502.
- Fishleder A, Henson L, Hull A. 2007. Cleveland Clinic Lerner College of Medicine: An innovative approach to medical education and the training of physician investigators. *Acad Med* 82(4):390–396.
- Harden RM, Shumway JM. 2003. AMEE guide No. 25: The assessment of learning outcomes for the competent and reflective physician. *Med Teach* 25(6):569–584.
- Holmboe ES, Sherbino J, Long DM, Swing SR, Frank JR, for the International CBME Collaborators. 2010. The role of assessment in competency-based medical education. *Med Teach* 32:676–682.
- Mann K, van der Vleuten C, Eva K, Armson H, Chesluk B, Dornan T, Holmboe E, Lockyer J, Loney E, Sargeant J. 2011. Tensions of informed self-assessment: How the desire for feedback and reticence to collect and use it can conflict. *Acad Med* 86(9):1120–1127.
- Sargeant J, Eva KW, Armson H, Chesluk B, Dornan T, Holmboe E, Lockyer JM, Loney E, Mann KV, van der Vleuten CPM. 2011. Features of assessment learners use to make informed self-assessments of clinical performance. *Med Educ* 45:636–647.
- Schuwirth LWT, van der Vleuten CPM. 2011. Programmatic assessment: From assessment of learning to assessment for learning. *Med Teach* 33:478–485.
- Watling CJ, Lingard L. 2010. Toward meaningful evaluation of medical trainees: The influence of participants' perception of the process. *Adv Health Sci Educ Epub*: Feb 9; doi: 10.1007/s10459-010-9223-x.
- Van der Vleuten CPM, Schuwirth LWT, Driessen E, Dijkstra J, Tigelaar D, Baartman LKJ, van Tartwijk J. 2012. A model for programmatic assessment fit for purpose. *Med Teach* 34(3):205–214.