Technology as an Instrument to Improve Quality, Accountability, and Reflection in Academic Medicine

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Objective: This article describes two complementary technology systems used in academic medicine to 1) improve the quality of learning and teaching, and 2) describe the barriers and obstacles encountered in implementing these systems.

Method: The literature was integrated with in-depth, case-based experience with technology related to student progression, faculty promotion and school administration.

Results: Academic medicine concerns itself with data and outcomes. Psychiatrists need to attend to their learning and teaching paths as much as to developing the knowledge and skills to manage their patients.

Conclusions: Technology enables us to track, manage, and report these data with increasing ease, making transparency and accuracy more achievable.

Medical Student Portfolios: My Oleport (My Online Electronic Portfolio)

No one would question an architect’s or artist’s need for a comprehensive portfolio to demonstrate the depth and breadth of his or her ability. Traditionally, evaluation of the medical students has relied on written exam scores, objective structured clinical exams (OSCEs), oral exams, 360-degree evaluations from patients, nurses, and peers, and narrative reports (usually very brief) from faculty. These student evaluations were typically completed at the end of a course, with a copy kept in folders in a locked cabinet in the registrar’s office. Faculty advisers were required to request copies or go to the office to examine a student’s folder. Those few students in academic difficulty found that a school official was indeed following their progress as they were called into the Dean’s office. However, for those students who performed at or above average, final grades provided the only solace that they were moving forward.

Self-Assessment

Missing from the student’s folder is any attempt on the part of the student at self-assessment or peer-assessment. This means that faculty are limited in their ability to determine whether a student can engage in lifelong adult
learning, including the ability to identify weaknesses and develop a focused learning plan to address those weaknesses—two skills that are crucial to the practicing physician. To address these deficiencies, some medical educators have come to rely upon Web-based electronic portfolios (ePortfolios) as a data management system, a method to stimulate reflective learning, and an assessment tool. These tools also facilitate communication and provide more effective mentoring, particularly when geographic distances make communication difficult. ePortfolios are intended to encourage systematic reflection by mandating that students maintain narrative logs that foster a critical examination of their performance, and attempt to manage their own professional development with feedback from mentors.

The ePortfolio drives the interaction between a faculty mentor and advisee at least three times a year. Two weeks prior to a required meeting with their mentor, students are sent an e-mail asking them to log in to the Oleport and address newly posted self-reflective questions. Some questions relate to career development (Figures 1 and 2) and others ask students to engage in reflective learning, as is the case following an OSCE. Each structured entry requires students to address three domains with regard to particular assigned graduation competencies or objectives: 1) what are the weaknesses/strengths in achieving specified competencies? 2) what is the learning plan to achieve competency? and 3) how will the student identify outcome(s) measures to demonstrate competency? As a simple example, students might watch a video recording of their exam of a 55-year-old man with back pain. After watching the encounter with a skill assessment guide, the students are asked to 1) identify the strengths and weaknesses of their exam; 2) develop a learning plan to improve their exam of a patient with back pain (e.g., “I will find a neurologist to demonstrate an evidence-based approach to the back pain or review an online tutorial of the back exam”); and 3) identify outcome measures to prove competency (e.g., “I will have a neurologist observe my exam of the back and sign off that I am competent”). At the conclusion of each ePortfolio session, the entry is e-mailed to the faculty mentor who is encouraged to respond to the student in writing. In any case, mentors are required to meet with their students to review their reflection and approve learning plans.

The ePortfolio as a Learning Tool
Reflection should be a crucial part of adult learning. It involves an active recollection and assessment of past events intended to encourage adults to learn from experience. It is no surprise that adults benefit from continuously looking back on their actions/behavior and analyzing them in the context of how things might have been improved. Ideally, reflection is the beginning of a cycle and is followed by practicing new approaches and then again reflecting back with the goal of continuous quality improvement.

The ePortfolio is an online tool intended to track and manage this reflection. If used appropriately, this reflective tool helps students develop more in-depth understanding of how and why they learn, and it asks them to consider alternative approaches to learning that might be tried in the future. It is important for the students to receive regular feedback on the specifics of their reflective learning (calibration) that fosters a critical attitude toward their performance and helps them plan and manage their own development. Remedial plans are needed to address the needs of those students who lack the critical ability to appraise their strengths/weaknesses. Measurable outcomes will be necessary to document impact.

Limitations of the ePortfolio
ePortfolios are effective learning tools for most, but not all, learners. To achieve maximum effectiveness, certain conditions must be met, including 1) a good explanation of the ePortfolio, including its goals/objectives and what is expected of the student; 2) clear user-friendly technology; 3) appropriate follow-through with a mentor; 4) appropriate faculty development to ensure strong coaching skills; and 5) a summative assessment (1). Even when each of these goals is met, faculty go to considerable lengths to convince students of the benefits of reflective learning. While providing structure is crucial to helping a student learn self-assessment skills, too much structure can be stifling and reduce reflective learning. We have also found that reflection for the sake of reflection without direction is not fruitful. Requests for students to “log on” to the ePortfolio system need to follow clearly identified clinical experiences where reflection would be of benefit, such as home visits, hospice visits, OSCEs, the end of clerkships, or career planning exercises. Following written reflection, the students receive timely discussion and feedback on the quality of their ePortfolio entries and on their identified learning plan.

Though students object to being graded on their portfolios, faculty feel that completion of the portfolio is an important part of the students’ assessment in the domain of professionalism. Completion of the portfolio requires