Designing a Portfolio-Based Assessment System: Lessons from the Trenches
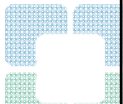
Designing a Portfolio-Based Assessment System: Lessons from the Trenches

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Cleveland Clinic
Lerner College of Medicine
of Case Western Reserve University
A program of
SCHOOL OF MEDICINE
CASE WESTERN RESERVE UNIVERSITY

Agenda

- Give brief overview of program
- Discuss design of assessment system
- Describe program outcomes
- Provide lessons learned

Cleveland Clinic Lerner College of Medicine (CCLCM) of CWRU

Established in 2002

Prepare physician-investigators

Curriculum
- Organ-based courses
- Early clinical experiences
- Longitudinal research curriculum
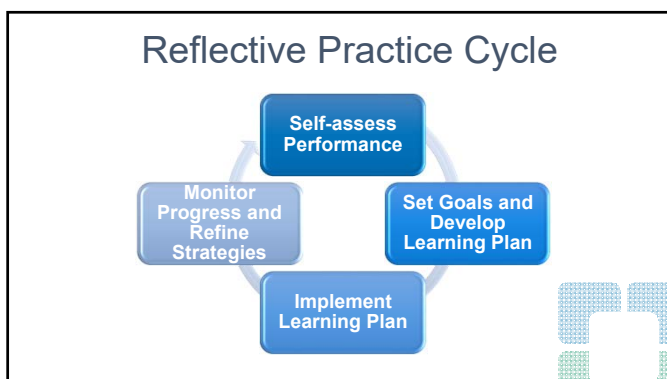
Portfolio-based Assessment System
- No grades, class ranks, or AOA
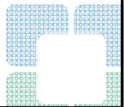
Fishleder et al. (2007). *Acad Med.* 82;390-96

Overarching Goal

Prepare **reflective practitioners** of medicine and science whose drive for lifelong learning is complemented by a critical approach to self-assessment and self-improvement.

Reflective Practice Cycle

- Self-assess Performance
- Set Goals and Develop Learning Plan
- Implement Learning Plan
- Monitor Progress and Refine Strategies

How did we obtain faculty buy-in?

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Initial Strategies

- Visionary leadership
- Catalyst foundation grant
- Faculty retreats
  - *What was assessment like for you?*
  - *When did you become a self-directed learner?*
- Consultants
- Central oversight

Building Blocks of CCLCM's Portfolio-Based Assessment System

Assessment Principles

- Should enhance learning
- Remain progressive and cumulative
- Occur in authentic, experiential settings
- Feature self-assessment cycles and advising
- Focus on competencies – no grades/ranks
- Facilitate partnerships

Dannefer EF, Henson LC. (2007). *Acad Med,* 82(5), 493-502.

Assessment *for* Learning

- Frequent formative feedback
- Clear performance expectations
- Opportunities to address performance gaps
- Collaborative dialogue
- Supportive learning environments

Clark I. (2012). *Educ Psychol Rev,* 24, 205-249.
Nicol DJ, Macfarlane-Dick D. (2006). *Studies in Higher Education,* 31(2), 199-218.

CCLCM's Competencies

Professionalism
Interpersonal and Communication Skills
Patient Care
Knowledge for Practice
Teamwork & Interprofessional Collaboration
Systems Based Practice
Research & Scholarship
Professional & Personal Development
Reflective Practice

Milestones

- Specifies expectations
  - Developmentally appropriate
  - Aligned with educational experiences
- Demonstrates observable behaviors/abilities
- Can be assessed in multiple ways
- Can be judged by others

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Patient Care Milestones

Year 1
Performs individual components of standard history and physical exam

Year 2
Performs individual components of standard history and physical and integrates these components into a comprehensive evaluation

Year 5
Obtains thorough and accurate information through an H&P adapting to the clinical setting

Curricular Alignment

Year 1 Milestones

Performs individual components of standard history and physical exam.

Uses reasoning to analyze case-based problems in a systematic approach that includes the generation of learning objectives and hypotheses.

Prioritizes information when analyzing case-based problems.

Year 1 Experiences

Physical examination with SPs
Communication skills with SPs
Longitudinal clinic experiences
Recorded patient encounter
Observed history and physical
PBL presentations
Pediatrics & geriatrics experiences
Formative OSCE

Assessment Evidence

College Provided
- Concept appraisals
- Self-assessment questions
- Narrative faculty feedback
- Narrative peer feedback
- OSCEs (formative)
- Clinical Skills Exam
- Self-assessments

Other Sources
- Licensure exams
- NBME exams (optional)
- Research products
- Graduate course work
- Other work products
- Unique evidence

What is a Portfolio?

"A **purposeful collection** of student work that tells the story of the student's efforts, progress, or achievement in (a) given area(s). This collection must include **student participation** in selection of portfolio content; the guidelines for selection; the criteria for judging merit; and evidence of **student self-reflection**."

Arter & Spandel. (1992). *Educational Measurement: Issues & Practice.* 11(1), 36-44.

Benefits of Portfolios

- Captures what learners know and do
- Promotes reflective practice
- Gives learners more responsibility
- Provides autobiography of learner growth
- Supports formative and summative assessment

Portfolio Assessment System
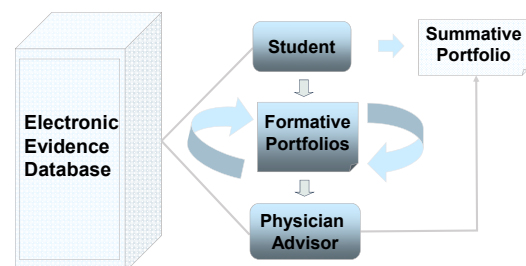
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Patient Care Portfolio Essay

Perform individual components of standard history and physical exam

It's strange to think that eventually patient care will be a cornerstone of my career, but for now, it's the competency in which I have the least experience. Thankfully, Basic Communication Skills and Physical Diagnosis sessions were useful preparation for performing the standard history and physical exam with LC patients. For the standard history, I feel comfortable obtaining the chief complaint, history of present illness, past medical/surgical history, medications/allergies, and family/social history, especially as they relate to the patient's reason for the visit, and this was reflected in my CS, LC, and OSCE assessments (46) (41) (43). By the end of the year, I was praised by both my CS facilitators and LC preceptor for the comprehensiveness of my medical interviews and database collection, which became easier once I figured out a systematic way to mentally organize each interview section (42) (47). Having not practiced Review of Systems in CS, I'm less at ease incorporating it into my interview and still have to work on memorizing the problem lists associated with each system (44); for the same reason, I sometimes forget to ask for Ob/Gyn history and have tried to become more conscientious about including it (43). Throughout the year, I also worked on my oral presentation skills and received positive feedback regarding the thoroughness and organization of my practice patient presentation, along with some tips for including more of the patient's perspective that I've tried to incorporate into future presentations (89). For the physical exam, I practiced obtaining vital signs and performing the cardiovascular/pulmonary/head and neck/abdominal/neural/musculoskeletal exams in both PD and LC, and have been gaining proficiency as I get more experience (69) (90) (46). It was initially challenging for me to locate the carotid pulse rapidly, but I've gotten faster with practice (69) (45); after getting a reminder, it also became habitual for me to sanitize my hands before touching patients (45) (47). Based on my OSCE results, additional PD skills to practice include chest excursion, liver palpation, and order of abdominal quadrant palpation (painful area last) (43). Since I haven't yet encountered many abnormal physical exam findings, I'm still uncertain how pathological anatomy such as an enlarged liver feels upon abdominal exam and look forward to gaining more experience in this area next year.

Example of Assessment Form

Example of Assessment Form

Example of Assessment Form

Example of Learning Plan

Competency	Learning Goal	Plan of Action	Measureable Outcome
Interpersonal and Communication Skills	Make presentations more interactive and engaging	Practice in PBL giving interactivity of learning objective presentations	Feedback from PBL facilitator and peers on efforts to give concise presentations that engage audience

"Portfolios are training wheels for reflective practice."

Renee Salas, MD, MS, MPH
https://en.wikipedia.org/wiki/Renee_Salas

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Key Roles in Assessment System

Assessors
PBL facilitators, research preceptors, lab personnel, clinical preceptors, essay reviewers, peers, self, etc.

Physician Advisors
Feedback coaches, informal performance monitoring, curriculum advising, portfolio preparation & verification

Promotion Committee
Promotion and disciplinary decisions, formal performance improvement monitoring

Educator Development

Role Specific
PBL facilitator, longitudinal clinic facilitator, research preceptors, communication skills preceptors, etc.

Longitudinal
Physician Advisors (weekly meetings and onboarding)
Promotion Committee (monthly meetings and onboarding)

System-wide
Essentials Series (in person and asynchronous)
Distinguished Educator Certificates and Fellowships
Masters in Medical and Health Professions Education

Learner Development

Workshops
- Introduction to Assessment System
- Providing Peer Feedback
- Creating Formative Portfolios and Learning Plans
- Creating Summative Portfolios

Regular Meetings with Physician Advisors

Ongoing communication

Challenges

- Time intensive
- Onboarding new faculty to roles, feedback expectations, and culture
- Increasing time demands on faculty
- Updating technology regularly
- Maintaining rather than creating

How can I *prove* CCLCM's portfolio-based assessment system "works"?

How do we *monitor* and continuously *improve* CCLCM's portfolio-based assessment system?

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Graduates' Specialty Choices
Classes of 2009-2022 (n = 433)

Medical (n = 232, 54%)	Surgical (n = 154, 35%)	Procedural (n = 47, 11%)
Internal Medicine (99)	Orthopedic Surgery (25)	Anesthesiology (16)
Pediatrics (39)	General Surgery (21)	Radiology – Diagnostic (14)
Dermatology (20)	Neurological Surgery (20)	Pathology (9)
Neurology (20)	Otolaryngology (20)	Radiation Oncology (8)
Emergency Medicine (18)	Obstetrics and Gynecology (19)	
Family Medicine (12)	Ophthalmology (17)	
Psychiatry (11)	Urology (15)	
Medicine – Pediatrics (5)	Thoracic Surgery (7)	
Child Neurology (4)	Vascular Surgery (4)	
Physical Medicine & Rehab (4)	Plastic Surgery (3)	
	Surgery – Preliminary (3)	

Graduates' Match Results*

Cleveland Clinic Foundation (67)	Beth Israel Deaconess Medical Center (10)
Johns Hopkins University (19)	Yale – New Haven Medical Center (10)
University of Pennsylvania Health System (19)	Duke University Hospital (9)
Stanford University (19)	University of Michigan Hospitals & Health Ctrs (9)
Massachusetts General Hospital (18)	Vanderbilt University Medical Center (9)
Brigham and Women's Hospital (15)	New York Presbyterian Hospital - Columbia (8)
University of Washington Medical Center (15)	New York Presbyterian Hospital - Cornell (8)
David Geffen School of Medicine/UCLA (12)	McGaw Medical/Northwestern University (6)
University of Pittsburgh Medical Center (12)	University of California (Davis) (6)
CWRU/University Hospitals Medical Center (11)	Children's Hospital of Philadelphia (5)
University of California (San Francisco) (11)	University of Utah (5)

* Represents programs that matched ≥ 5 CCLCM graduates

Faculty Perceptions
2021 (n = 402/752, Response = 53%)

Perceptions of CCLCM	Physicians n = 316	PhDs/Others n = 86
	% Agree/Strongly Agree	
I have a sense of pride in the CCLCM program	97.8	98.8
CCLCM enhances the overall reputation of the Cleveland Clinic	97.5	100
I have been intellectually stimulated by my work in the CCLCM program	95.6	94.2
My work in the CCLCM program is professionally rewarding	94.3	94.1
My department chair values my involvement in the CCLCM program	87.0	89.5
CCLCM's leadership appropriately recognizes faculty for their contributions to the program	83.1	89.5
I received sufficient faculty development for my role(s)	77.2	73.3
I used my CCLCM activities to produce scholarly work (e.g., poster, presentation, publication, etc.)	34.8	41.9

Institutional Impact

- Expanded educator development programs
- Added reflective essays to faculty annual performance review ("mini portfolio")
- Revised teaching evaluations to increase qualitative feedback
- Developed award for clinicians who complete assessments and provide useful feedback

Alumni Follow Up

Questionnaires
- After internship
- 10 years post graduation

Engagement
- 22 graduates on staff

Scholarship
- Qualitative study

Alumni Follow-up

"The CCLCM model is to try to create well-rounded physicians who have research competency and other competencies…There is no test that would allow you to show that. The portfolio system is kind of the only way to do that." (Physician)

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Alumni Follow-up

"You know I think that it is a very personalized system, which involves a lot of work both on our part and on the person who has to read our portfolio…You know it makes you feel a lot more like they see you as a whole person rather than as a number." (Physician)

Alumni Follow-up

"I think the most important one that I can recall is just the overall concept of self-learning and trying to always continuously improve upon your performance. That was something that directly carried over from [CCLCM's] assessment system over into residency." (Physician)

Scholarship on Educational Effects

Lessons Learned

- Better to be revolutionary, than evolutionary.
- View assessment as a complex system with multiple, integral components.
- Advisors are critical.
- Develop principles to obtain faculty buy-in, guide assessment system design, and inform policies.
- Create a "graduate education" during medical school to prepare learners for their careers.

Lessons Learned

- A portfolio is not a filing cabinet. Students must have ownership to select and reflect upon assessment evidence.
- Engage frequently with stakeholders and offer reassurance and support.
- Let the vision, not available technology, dictate the features and functions of portfolios.
- Determine if goal is "assessment *for* learning", "assessment *of* learning", or combination.

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I just spent 45 min speaking with you. What is something that you heard that you think could apply to your curriculum renewal process?

Cleveland Clinic
Every life deserves world class care.