

Assessment Part I

Student Assessment: Are students learning what we think we are teaching?



University of Tokyo
November 28, 2014

Mary Y. Lee, MD, MS, FACP
Project Professor, 2014-2015
IRCME, Graduate School of Medicine
University of Tokyo, Japan

Tufts

Tokyo, Lee November 2014

Aims

1. Exchange ideas on health sciences education
2. Focus on student assessment of "soft skills"
3. Describe some assessment purposes and methods
4. Provide "hands-on" assessment activities
5. Consider next steps for your course/program

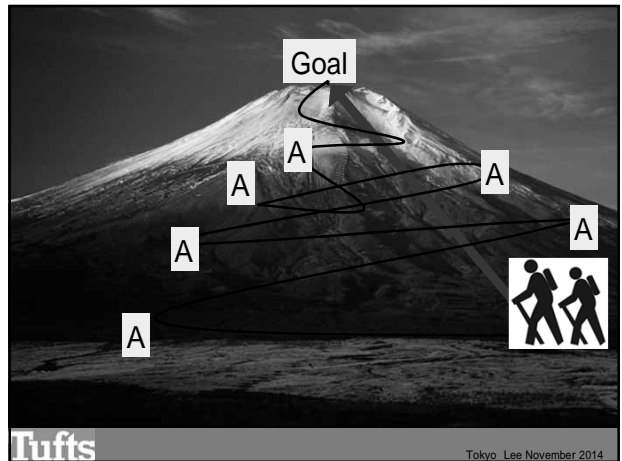
Tufts

Tokyo, Lee November 2014

Why do we assess?

Tufts

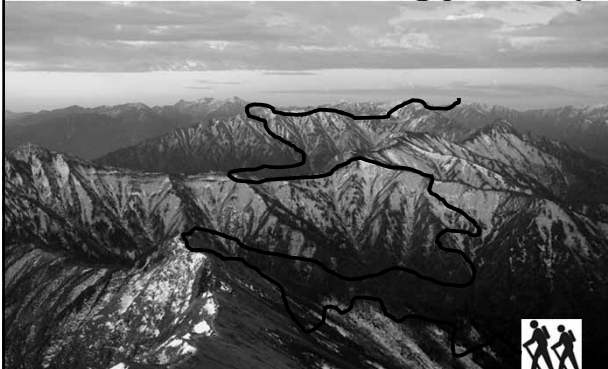
Tokyo, Lee November 2014



Tufts

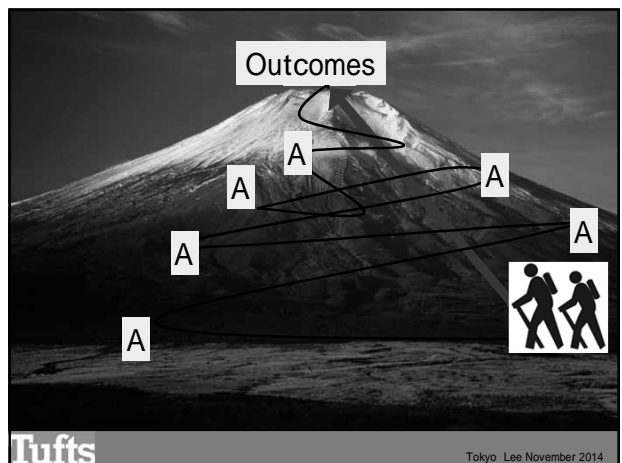
Tokyo, Lee November 2014

Medicine is a lifelong journey



Tufts

Tokyo, Lee November 2014



Tufts

Tokyo, Lee November 2014

Outcomes = Mission

- The “outcomes” of your curriculum must support your “mission”

Tufts

Tokyo Lee November 2014

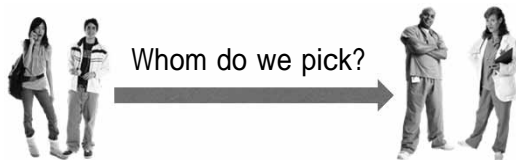


What is the mission of your Faculty of Medicine?
Research? Clinical? Both?

Tufts

Tokyo Lee November 2014

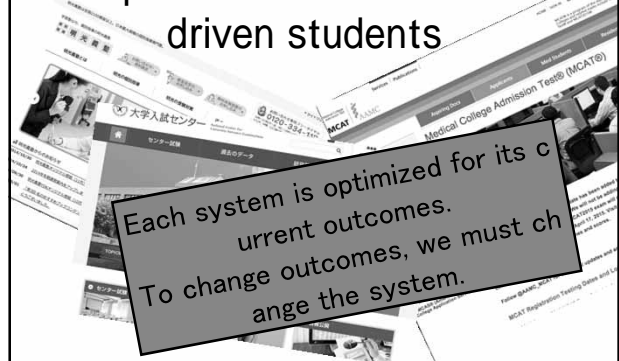
Start with the students



Tufts

Tokyo Lee November 2014

We pre-select assessment-driven students



Tufts

Tokyo Lee November 2014

Can we select better? Train better?



Tufts

Tokyo Lee November 2014

Selection techniques

Test scores are insufficient predictors of future performance

- Multiple Mini Interviews: Eva, et al, McMaster University, 2001
- Structured, behavioral-based interviews: “Tell me about a time when you needed to stand up for your beliefs...”
- Admission OSCEs for behaviors, problem solving
- Group interviews

Tufts

Tokyo Lee November 2014

Assessment drives learning

Tufts

Tokyo, Lee November 2014

Assess what you feel is important, with appropriate relative weighting



Knowledge



Skills



Attitudes

Tufts

Tokyo, Lee November 2014

If professional attitudinal behaviors are not explicitly stated as expected, and are not assessed, they will be ignored. You will miss the opportunity to reinforce positive behavior.



Tufts

Tokyo, Lee November 2014

If *assessment drives learning*, how can we use assessment methods to promote student responsibility for learning communication skills and professionalism?

Tufts

Tokyo, Lee November 2014

Types of Assessment

- Summative
Assessment *of* learning
- Formative
Assessment *for* learning

Tufts

Tokyo, Lee November 2014

Behavioral assessment

- Describe expected behaviors
- Integrate attitudinal/behavioral assessment
- Reinforce positive behavior
- Detect and address negative behavior formatively

Tufts

Tokyo, Lee November 2014

Addressing difficult topics

Use audience response systems to assess overall student attitudes about difficult ethical issues that can be followed up in small group discussions

Tufts Tokyo, Lee November 2014

Discuss ethical decisions Face-to-face vs. online

Can provide venue for Less vocal students to contribute

Tufts Tokyo, Lee November 2014

Integrate with foundational knowledge...

Introduce and assess communication skills, professionalism
Timing of Assessments

Tufts Tokyo, Lee November 2014

Reinforce professional behaviors in all aspects of training, individually or in learning groups

Create Evaluate Analyze Apply

Tufts Tokyo, Lee November 2014

Align Assessment with Outcome

Formative Summative Attitudes Performance Outcome (Competency) Knowledge Skills Why What How When

Tufts Tokyo, Lee November 2014

Example using goal of Communication Skills (CS)

PBL Interviewing Clinical Skills Peer/F/SP Self OSCE+ F

Foundation: Integration of foundational goals of knowledge, skills, and attitudes
Formative: Peer/faculty feedback from on-site practice and small groups Journal Standardized Patient
Summative: Evidence needed to show mastery

Tufts Tokyo, Lee November 2014

Activity Part I

Tufts

Tokyo, Lee November 2014

Draft an assessment pathway



By the end of this unit the student will be able to:

Foundational units: What other units should your unit be integrated with to provide foundational K/S/A?	Formative: What data (from assessment) is needed to help the student learn?	Summative: What data (from assessment) is needed to document mastery?

Tufts

Tokyo, Lee November 2014

If *assessment drives learning*.

Whether summative or formative:

- Why, what, how, when are you assessing?
- Does it match your objectives, with weighting based on importance?
- Does it help students fulfill the objectives?
- Is it instructional (support learning, ID deficiencies)?
- Is it motivational instill lifelong desire and ability to climb mountains?
- Are you reinforcing/building on other parts of the curriculum?

Tufts

Tokyo, Lee November 2014

Design curriculum by working “backwards” from goals of clinical performance



Tufts

Tokyo, Lee November 2014

Formative

Assessment *for* learning:

- Throughout a course or project
- Aid learning by identifying strengths and gaps/misconceptions
- Guide student's path to mastery
- Self-assessment vs. peer or faculty
- Guide real-time course revisions

Tufts

Tokyo, Lee November 2014

Link between assessment and feedback

- Assessment *of* learning

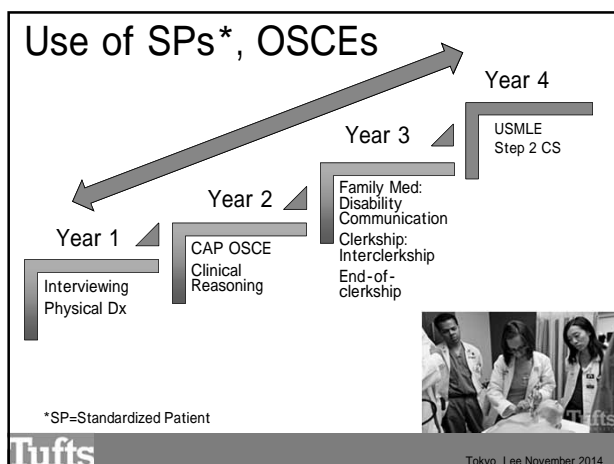
Measure what learning has occurred at a point in time

- Feedback *for* learning

Provide information to gain mastery

Tufts

Tokyo, Lee November 2014



Year 4 USMLE Step 2 CS

- Taken in early Year 4
 - Needed for residency applications
 - 97-99% pass rate
 - Skills essential for rotations
- Tufts Tokyo, Lee November 2014

OSCEs are only one mode.
Must use OSCEs with other
modes for assessment of
complex clinical skills and for
different learners

Tufts Tokyo, Lee November 2014

Complementary assessment

Formal/informal, immediate/delayed

- Faculty to student/group/team
 - Peer to peer, resident to student
 - Self-assessment, student-initiated
 - Writing assignments, journal
 - Discussion (online or in person)
- Tufts Tokyo, Lee November 2014



Flexible orientation space



“Command” corridor



Flexible room formats

Tufts

Tokyo, Lee November 2014



Formative training

Tufts

Tokyo, Lee November 2014

Faculty assessment



Faculty in observation room or remotely

- Complement to SP
- Immediate feedback
- Delayed feedback
- Documentation for borderline students
- Evaluation of clinical reasoning

Tufts

Tokyo, Lee November 2014

A sample competency

Patient-centered Perspective:

The student seeks to understand and respect patient's background, culture and belief systems

The standardized patient is trained to evaluate whether the student.

- elicited (or listens to) my beliefs, concerns and expectations about illness or treatment
- was non-judgmental

Tufts

Tokyo, Lee November 2014



Integrated and Applied Learning

Tufts

Tokyo, Lee November 2014

Clinical evaluation

- Halo/horn effect
- Restriction of range
- All above average
- Rating nonperformance attributes
- Identifying competencies inaccurately
- Mitigated with multiple evaluations

Tufts

Tokyo, Lee November 2014

Students need to know on what and how they will be assessed, assessment *for* learning

Tufts Tokyo, Lee November 2014

Inputs for self-assessment to design learning plan

Based on Goals and feedback, what do I need to learn?

Tufts Tokyo, Lee November 2014

Activity Part II

Tufts Tokyo, Lee November 2014

Draft an assessment pathway

INPUT → () () () → OUTPUT

By the end of this unit the student will be able to:

Foundational units:	Formative:	Summative:
What other units should your unit be integrated with to provide foundational K/S/A?	What data (from assessment) is needed to help the student learn?	What data (from assessment) is needed to document mastery?

Tufts Tokyo, Lee November 2014

If assessment drives learning.

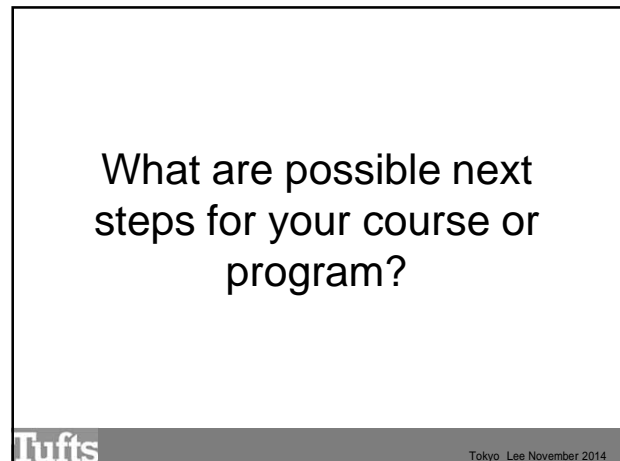
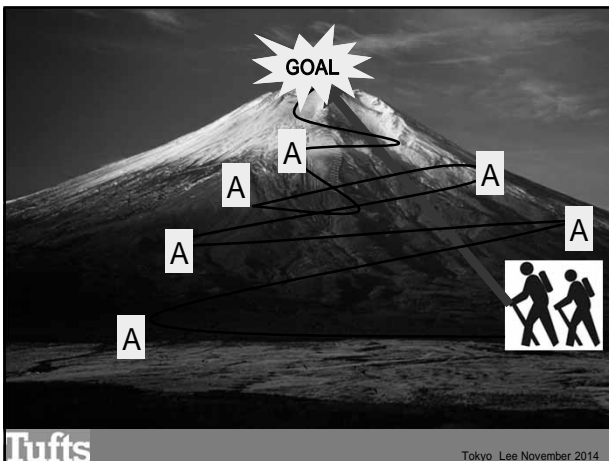
Whether summative or formative:

- Why, what, how, when are you assessing?
- Does it match your objective, with weighting based on importance?
- Does it help students fulfill the objective?
- Is it instructional (support learning, ID deficiencies)?
- Is it motivational instill lifelong desire and ability to climb mountains?
- Are you reinforcing/building on other parts of the curriculum?

Tufts Tokyo, Lee November 2014

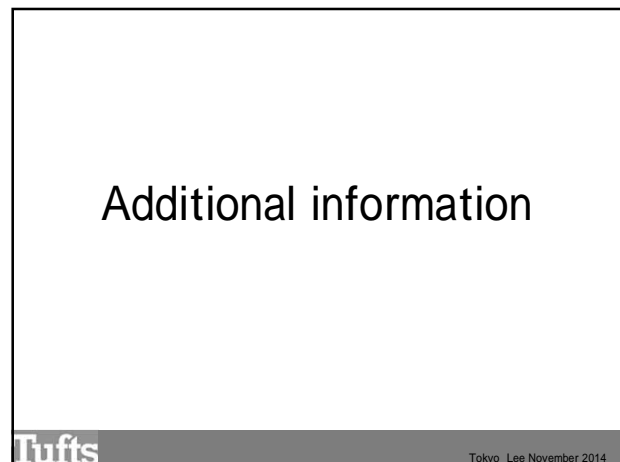
How might you change your assessment methods to increase student responsibility and to clarify your goals and learning expectations of the student?

Tufts Tokyo, Lee November 2014



Did we meet our aims?

1. Exchange ideas on health sciences education
2. Focus on student assessment of "soft skills"
3. Describe some assessment purposes and methods
4. Provide "hands-on" assessment activities
5. Consider next steps for your course/program



Year One Interviewing

- Program runs August through November
- Formative SP: entire afternoon, groups of 5 students
 - ✦ Interview 2 SPs, Observe 3
 - ✦ Feedback from peers, faculty, SP
 - ✦ Regular small groups, weekly patient interviews, journals
- Summative: 2 stations (20 min each), checklist grading by SP, with Director tape review for borderline students



Year One Physical Diagnosis

- November to April, coordinated with Anatomy
- Weekly lectures, quizzes, peer practice
- Formative: two 2-hour SP practice sessions (midway and near end)
- Summative: 10 focused direct observations by faculty/residents during course, plus final SP
 - ✦ 5-7pm, M-Thu, 25% class/night, 8-15 faculty/residents
 - ✦ 20-min station, SP checklist, Director review



Competency-based Apprenticeship in Primary Care

- April Year1 to March Year2
- **Formative:** weekly preceptor; 1 OSCE during Jan-Feb for Hx, PE, communication, clinical reasoning
- **Summative:** 20 min OSCE of Hx, PE, Communication; checklist by SP, Director review; write-up of H&P, DDX (with rationale), Dxtic evaluation (with rationale), graded by course directors and dean for education

Tufts

Tokyo, Lee November 2014

Year 3 Clinical Skills Interclerkship

- Mid-third year formative OSCEs
- Focuses on communication skills
- Groups of 5, interview and examine 2 patients, observe 3

Tufts

Tokyo, Lee November 2014

Year 3 Family Medicine

- Formative 2 station OSCEs
- Disability and communication

Tufts

Tokyo, Lee November 2014

Year 3 End-of-Clerkships

- March-April, must pass all 4 domains to graduate
- 7 stations (15m+10m write-up); plus ECG/CXR and task trainers for cardiopulmonary, ophthalmology and ENT physical exams
- SP checklists in 3 domains: Hx, PE, Interpersonal/Communication skills
- 4th domain: clinical reasoning (write-up) graded by faculty

Tufts

Tokyo, Lee November 2014

Year 3 End-of-Clerkships cont d

- Students use iPads for write-ups
- 18 students/day, 9-10 full days
- 30-35 faculty watch ~8 encounters/session, 2-3 per student
- Maine has its own OSCEs with 10 faculty

Tufts

Tokyo, Lee November 2014

OSCE ~¥60,000,000/year*

- ¥35,000,000/year for Boston SPs (not including Maine)
- ¥30,000,000 for Learning Space plus ¥2,350,000/year contract
- ¥4,700,000 for 1.0 coordinator
- ¥10,000,000/year for 1.0 Sim Specialist
- ¥3,500,000/year for 0.5 Evaluator
- ¥3,500,000/year for faculty director, lump sum

*Does not include equipment replacement, facilities operation, other IT

Tufts

Tokyo, Lee November 2014

Summative assessment

Assessment *of* learning:

- At end of course or project
- Based on weighted objectives
- Used to assign a grade, promotion status
- Often scaled to differentiate students
- Guides course revision for next cycle

Tufts

Tokyo Lee November 2014

Summative assessment

- Is it norm-based?

Assessment has a *relative standard* within the cohort being assessed (e.g., student s performance is compared relative to others)

- Is it criterion-based?

Assessment has an *absolute standard* without reference to the cohort (e.g., student s performance meets/doesn t meet a competency-based assessment)

Tufts

Tokyo Lee November 2014

Thank you!

Questions?

mary.lee@tufts.edu



Tufts

Tokyo Lee November 2014