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Assessment of Learning Environments in Medical Education *Instruments and Best Practices*

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#UCSFMedEd21

Brief reflection

Using the card in front of you quickly jot down some thoughts about your goals for this workshop.

"At the end of this workshop, I hope to be able to…"

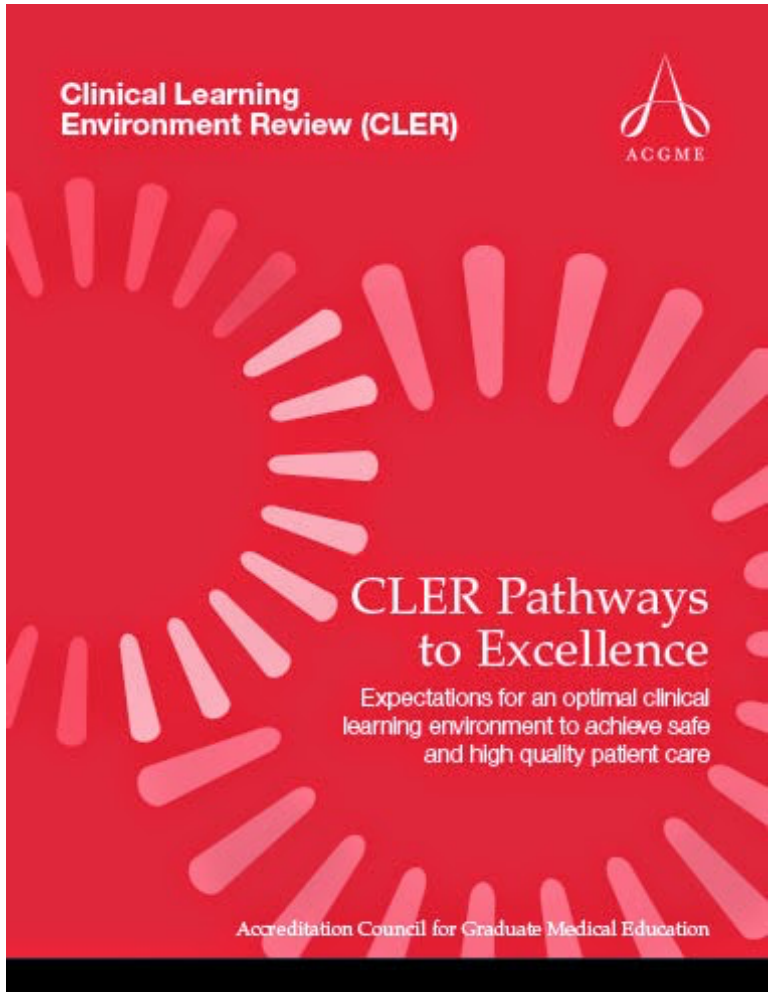
Objectives

1. Specify a focus for assessment of the learning environment
2. Identify qualitative and quantitative data and appropriate data collection instruments for assessment of the learning environment
3. Create a plan for assessment of the learning environment in your context
4. Identify strategies to address potential challenges

Outline

1. (Brief) recap of learning environments: definitions and frameworks
2. Reflection: what do you measure, and what would you like to measure?
3. Approaches to measurements and inventory of instruments
4. Draft a strategy for assessing the learning environment at your institution
5. Review of examples
6. Q&A and wrap up

Learning Environments for the Health Professions



AAMC Statement on the Learning Environment

Learning environment refers to the social interactions, organizational cultures and structures, and physical and virtual spaces that surround and shape participants' experiences, perceptions, and learning.

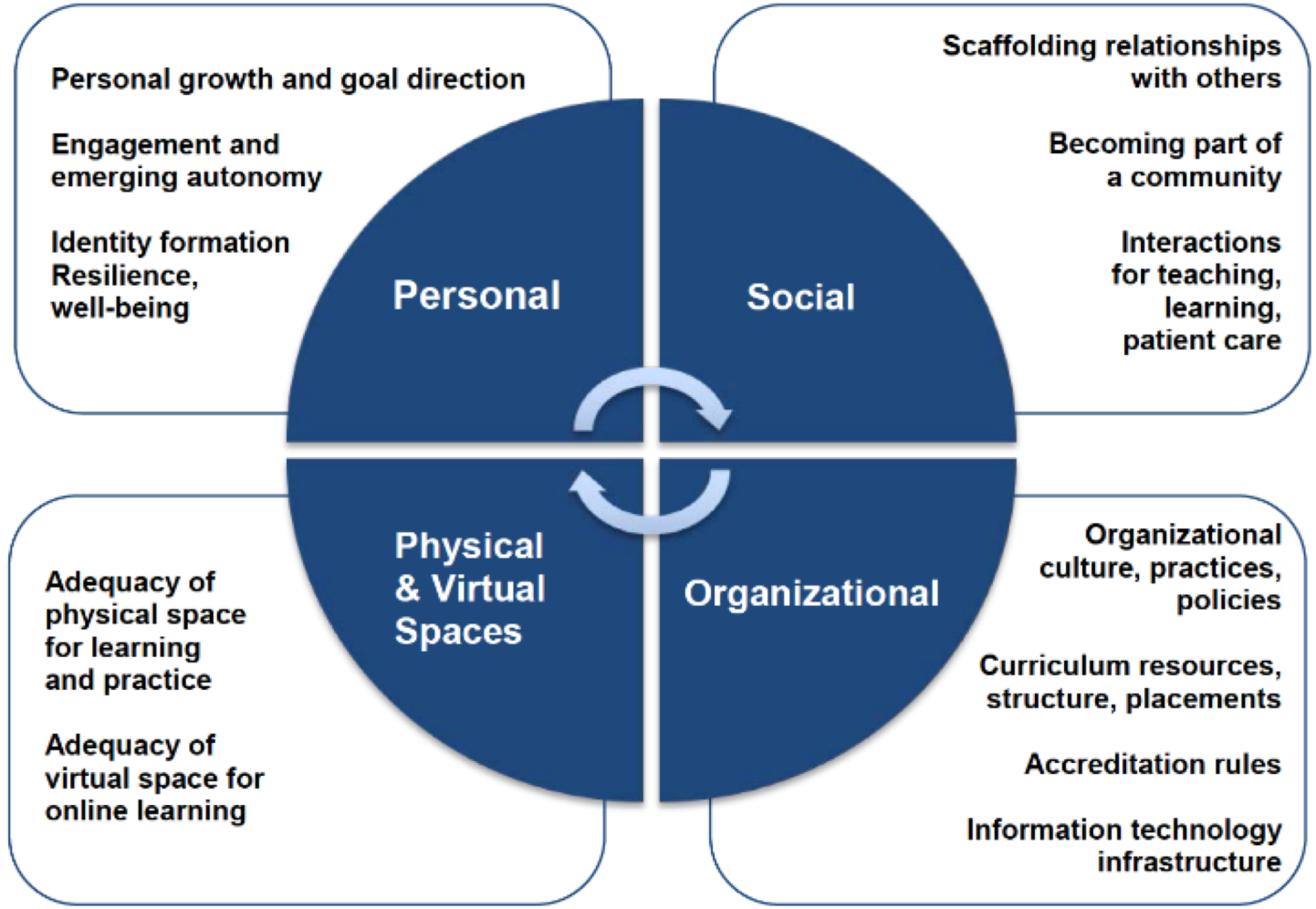


Figure 1. Four interactive components of the learning environment: personal, social, organizational, and physical & virtual.

Larry Gruppen, David Irby, Steven Durning, Lauren Maggio

Exemplary learning environments

VISION *Exemplary learning environments prepare, support, and inspire all involved in health professions education and health care to work toward optimal health of individuals, populations, and communities.*

Four pillars for exemplary learning environments

1. Shared goal of healthcare and health professional education: improving health
2. Learning is work and work is learning
3. Collaboration with integration of diverse perspectives
4. Focus on continuous improvement and innovation

Conference Recommendations

I: Engaging Academic and Health Care Organization Governance

Governance bodies and executive leadership of organizations responsible for health professions education and health care delivery should ensure positive learning and work environments and be held accountable for allocating the resources necessary to achieve this.

II: Engaging Executive Leadership to Provide Organizational Support

Executive leaders of health professions education and health care organizations should create cultures in which resources, policies, and processes support optimal learning environments across the continuum of health professions education.

III: Creating Physical and Virtual Spaces for Learning

Those in positions of responsibility for learning environments in health professions education and health care organizations should ensure appropriate, flexible, and safe spaces (physical and virtual) for learning.

IV: Providing Faculty and Staff Development

Leaders of health professions education and health care organizations should ensure continuous learning and development opportunities for their faculty and staff to improve learning environments.

V: Promoting Research and Scholarship

Those in positions of responsibility for learning environments should be committed to continuously evaluating, improving, and conducting research on those learning environments.

VI: Setting Policy

Health professions education and health care organization leaders and accreditors should engage in policy advocacy for improvements in health professions learning environments.

Measuring outcomes: What do you do?

- What quality measures of the learning environment are already collected at your institution?
- What others could you add?

  - *Worksheet in handout; Exercise 1*

Approaches to Measurement

- National and Accrediting Organizations
- Internal Quality Improvement
- External Consultants
- Institutional Collaborations

Challenges and Opportunities

National and Accrediting Organizations

Association of American Medical Colleges

- Academic Medicine Aims to Foster More Supportive Learning Environment
- Graduation and Year Two Questionnaires
- Liaison Committee for Medical Education (AAMC + AMA)
- School-level data

Accreditation Council for Graduate Medical Education

- Expectations for an optimal clinical learning environment to achieve safe and high quality patient care
- Clinical Learning Environment Reviews (CLER)
- Annual Resident/Fellow and Faculty Surveys
- Program-level data

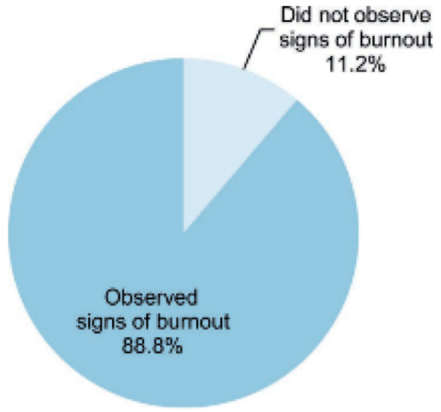


FIGURE 16
Percentage of Clinical Learning Environments Where Residents and Fellows Observed Some Signs of Burnout Among Faculty Members and Program Directors

Internal Quality Improvement

- Course Evaluations
- Curricular System Evaluations
- Educator Evaluations
- Learner Focus Groups
- Patient Satisfaction Surveys
- Employee Climate Surveys
- Performance Assessment
- Cross-Unit Peer Reviews
- Dashboards, Scorecards
- Review Committees

External Consultants

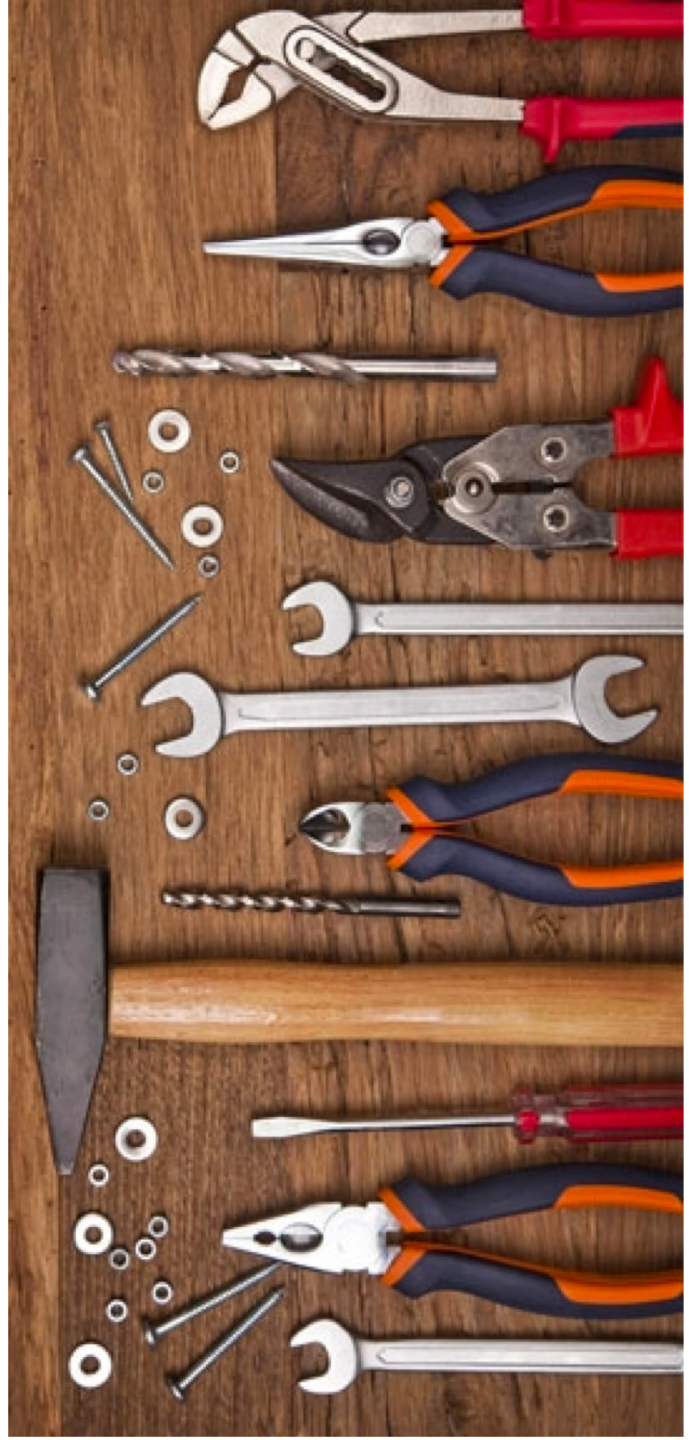
- High Performing Schools (AAMC identified)
- Culture Change (Psychiatry at Brandeis University)
- Peer Institutions

Institutional Collaborations

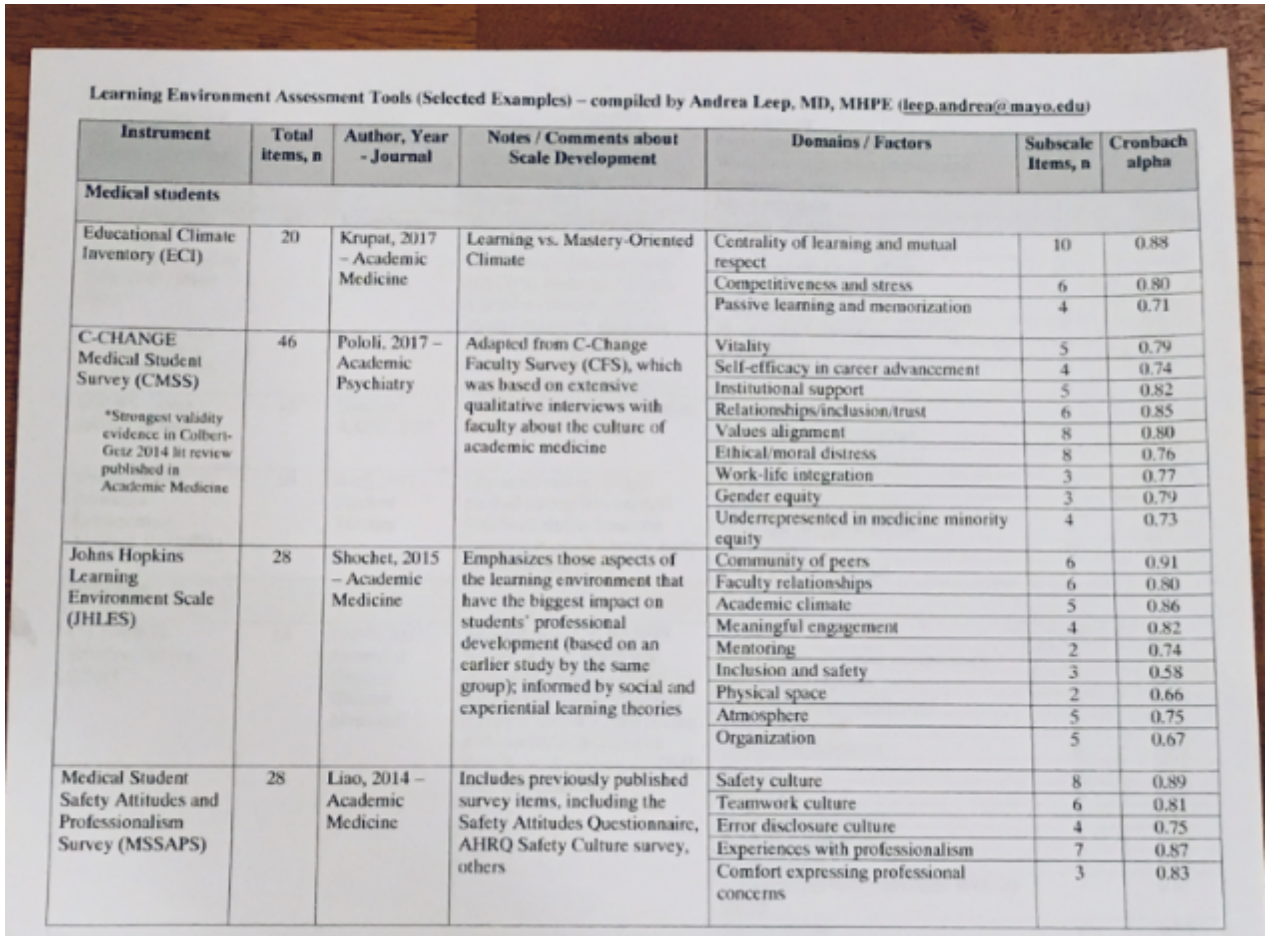
- American Medical Association
- Macy Foundation
- Kern Institute National Transformation Network
- Other?

Review of Existing Tools

- Quantitative, Qualitative and Mixed Methods
- Item Consistency, Alignment, Triangulation
- Inventory of Existing Instruments (Leep)

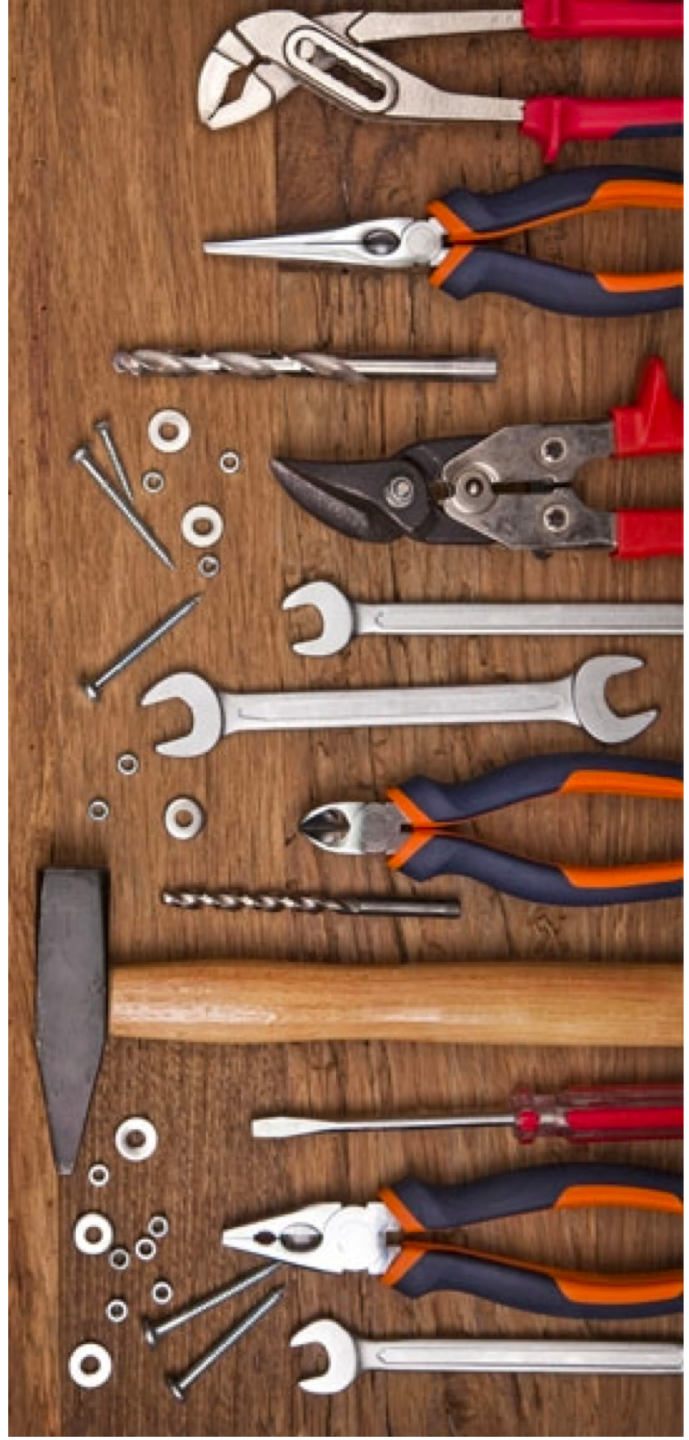


Inventory of Instruments



Learning Environment Assessment Tools (Selected Examples) – compiled by Andrea Leep, MD, MHPE (leep.andrea@mayo.edu)

Instrument	Total items, n	Author, Year - Journal	Notes / Comments about Scale Development	Domains / Factors	Subscale Items, n	Cronbach alpha
Medical students						
Educational Climate Inventory (ECI)	20	Krupat, 2017 – Academic Medicine	Learning vs. Mastery-Oriented Climate	Centrality of learning and mutual respect	10	0.88
				Competitiveness and stress	6	0.80
				Passive learning and memorization	4	0.71
C-CHANGE Medical Student Survey (CMSS) *Strongest validity evidence in Colbert-Getz 2014 lit review published in Academic Medicine	46	Pololi, 2017 – Academic Psychiatry	Adapted from C-Change Faculty Survey (CFS), which was based on extensive qualitative interviews with faculty about the culture of academic medicine	Vitality	5	0.79
				Self-efficacy in career advancement	4	0.74
				Institutional support	5	0.82
				Relationships/inclusion/trust	6	0.85
				Values alignment	8	0.80
				Ethical/moral distress	8	0.76
				Work-life integration	3	0.77
				Gender equity	3	0.79
				Underrepresented in medicine minority equity	4	0.73
Johns Hopkins Learning Environment Scale (JHLES)	28	Shochet, 2015 – Academic Medicine	Emphasizes those aspects of the learning environment that have the biggest impact on students' professional development (based on an earlier study by the same group); informed by social and experiential learning theories	Community of peers	6	0.91
				Faculty relationships	6	0.80
				Academic climate	5	0.86
				Meaningful engagement	4	0.82
				Mentoring	2	0.74
				Inclusion and safety	3	0.58
				Physical space	2	0.66
				Atmosphere	5	0.75
				Organization	5	0.67
Medical Student Safety Attitudes and Professionalism Survey (MSSAPS)	28	Liao, 2014 – Academic Medicine	Includes previously published survey items, including the Safety Attitudes Questionnaire, AHRQ Safety Culture survey, others	Safety culture	8	0.89
				Teamwork culture	6	0.81
				Error disclosure culture	4	0.75
				Experiences with professionalism	7	0.87
				Comfort expressing professional concerns	3	0.83



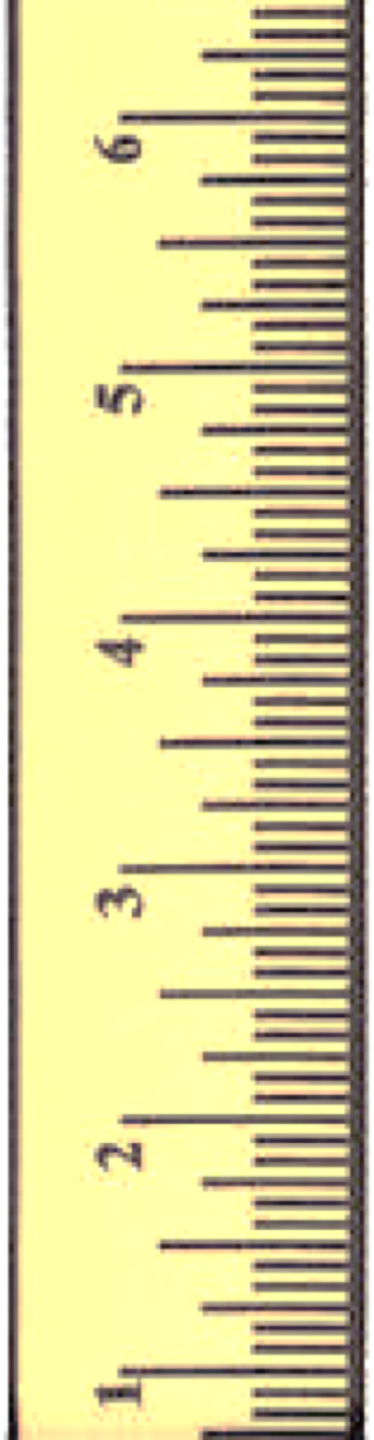
Inventory of Existing Instruments

- Theory

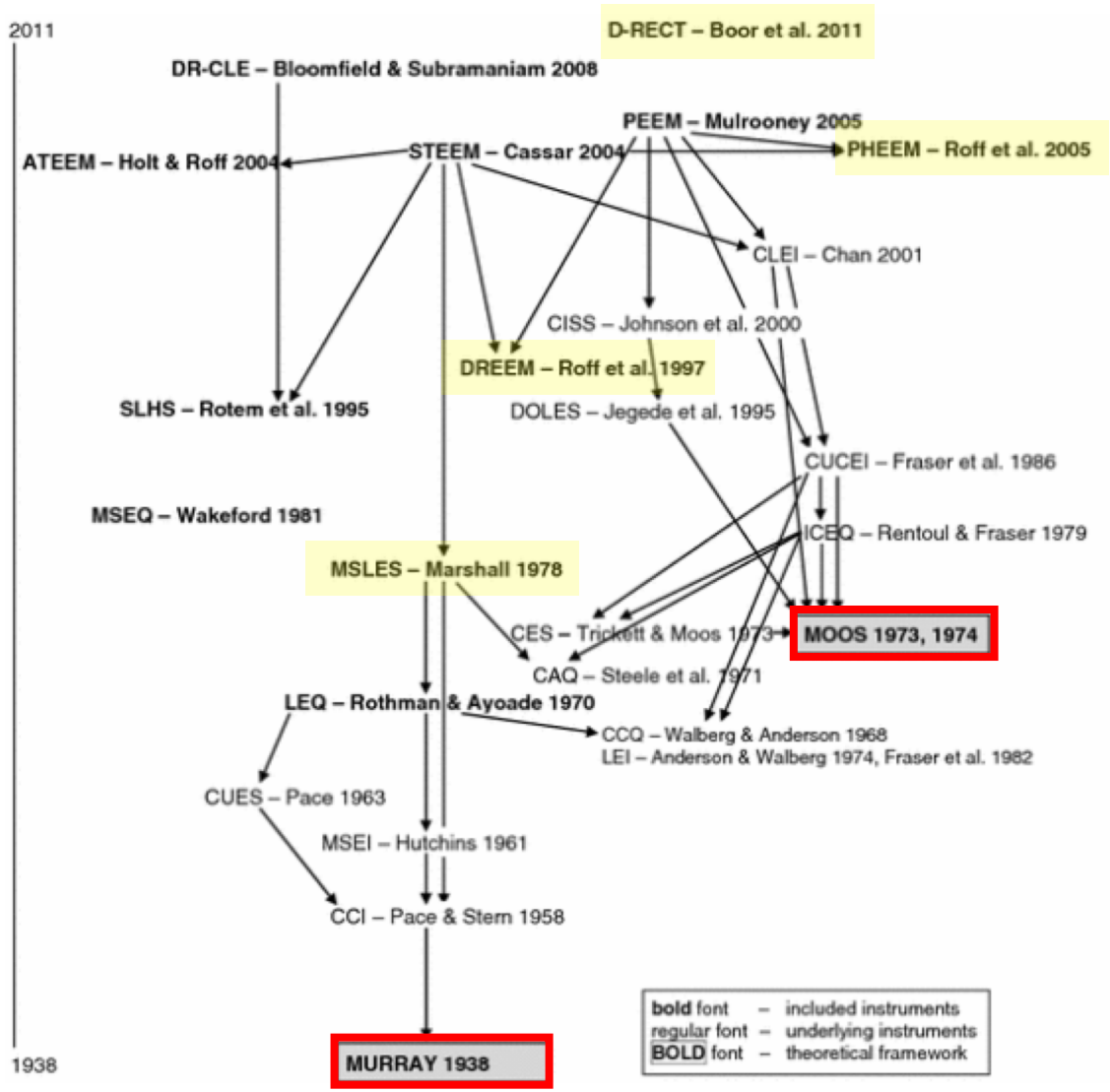
  Schönrock-Adema, J., Bouwkamp-Timmer, T., van Hell, E.A. et al. Key elements in assessing the educational environment: where is the theory? Adv in Health Sci Educ. 2012;17: 727-742.

- Validity Evidence

  Colbert-Getz JM, Kim S, Goode VH, Shochet RB, Wright SM. Assessing medical students' and residents' perceptions of the learning environment: Exploring validity evidence for the interpretation of scores from existing tools. Acad Med. 2014;89:1687–1693.

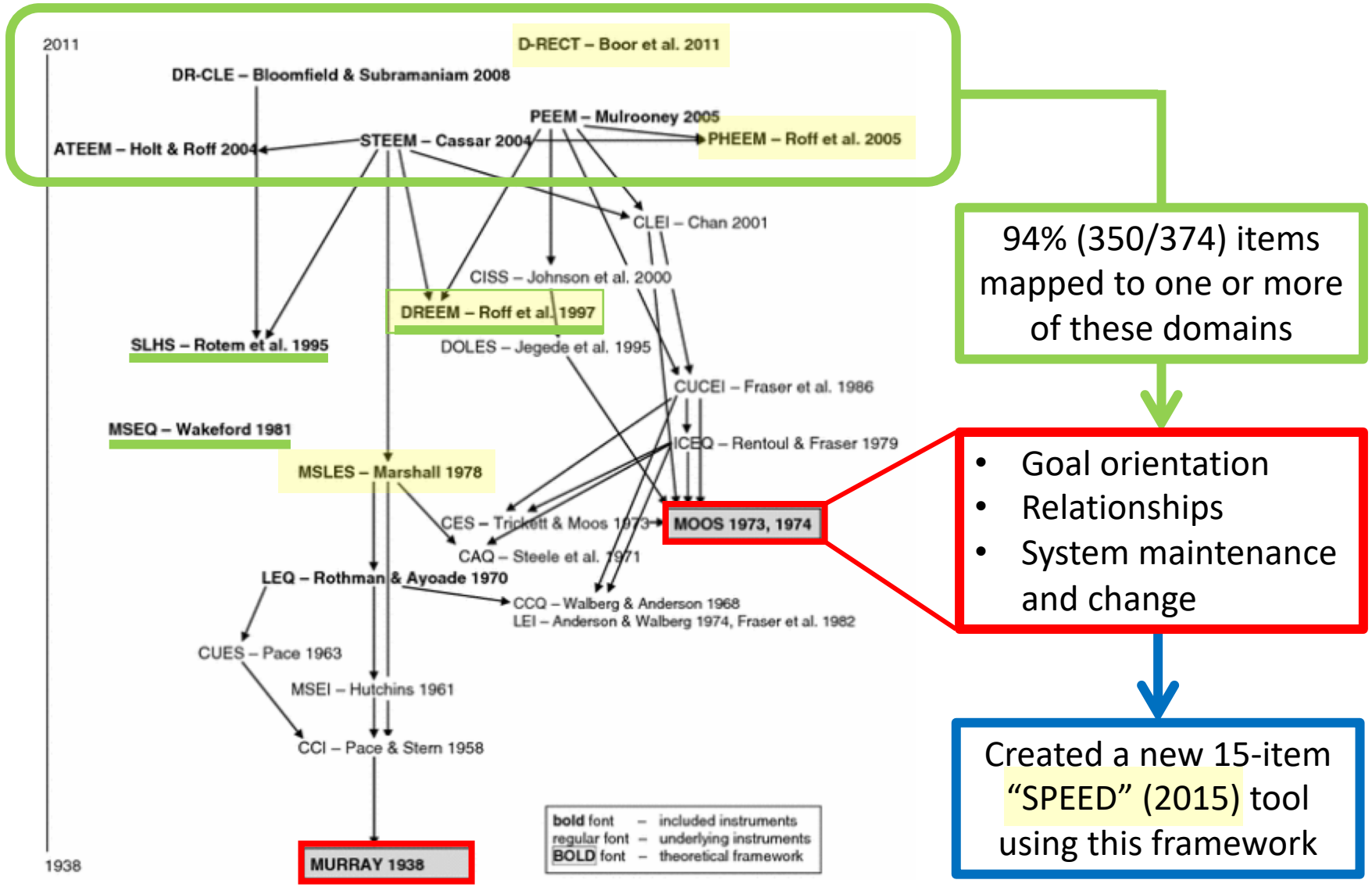


Theory



Schönrock-Adema, 2012

Theory



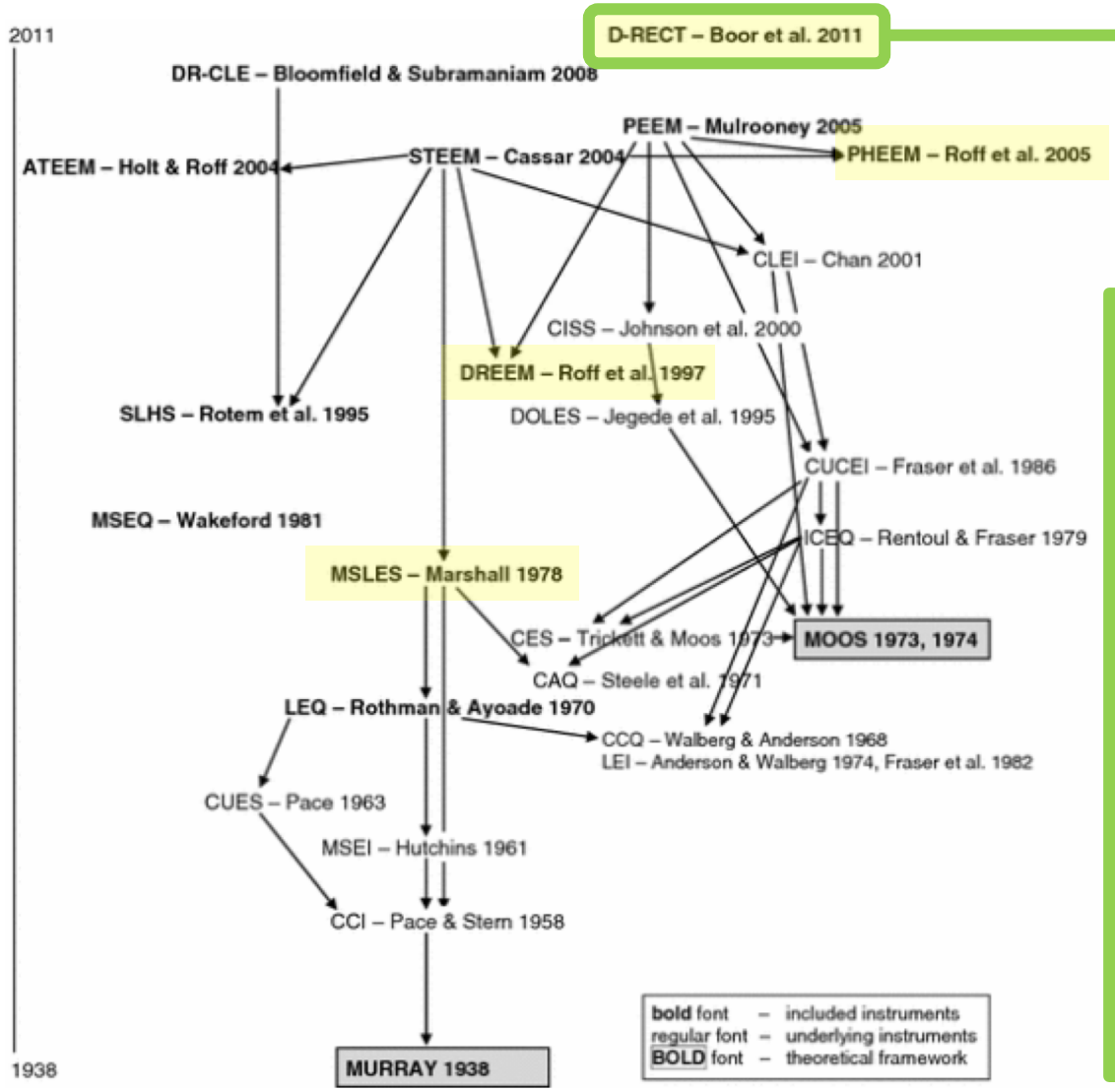
94% (350/374) items mapped to one or more of these domains

- Goal orientation
- Relationships
- System maintenance and change

Created a new 15-item "SPEED" (2015) tool using this framework

Schönrock-Adema, 2012

Theory



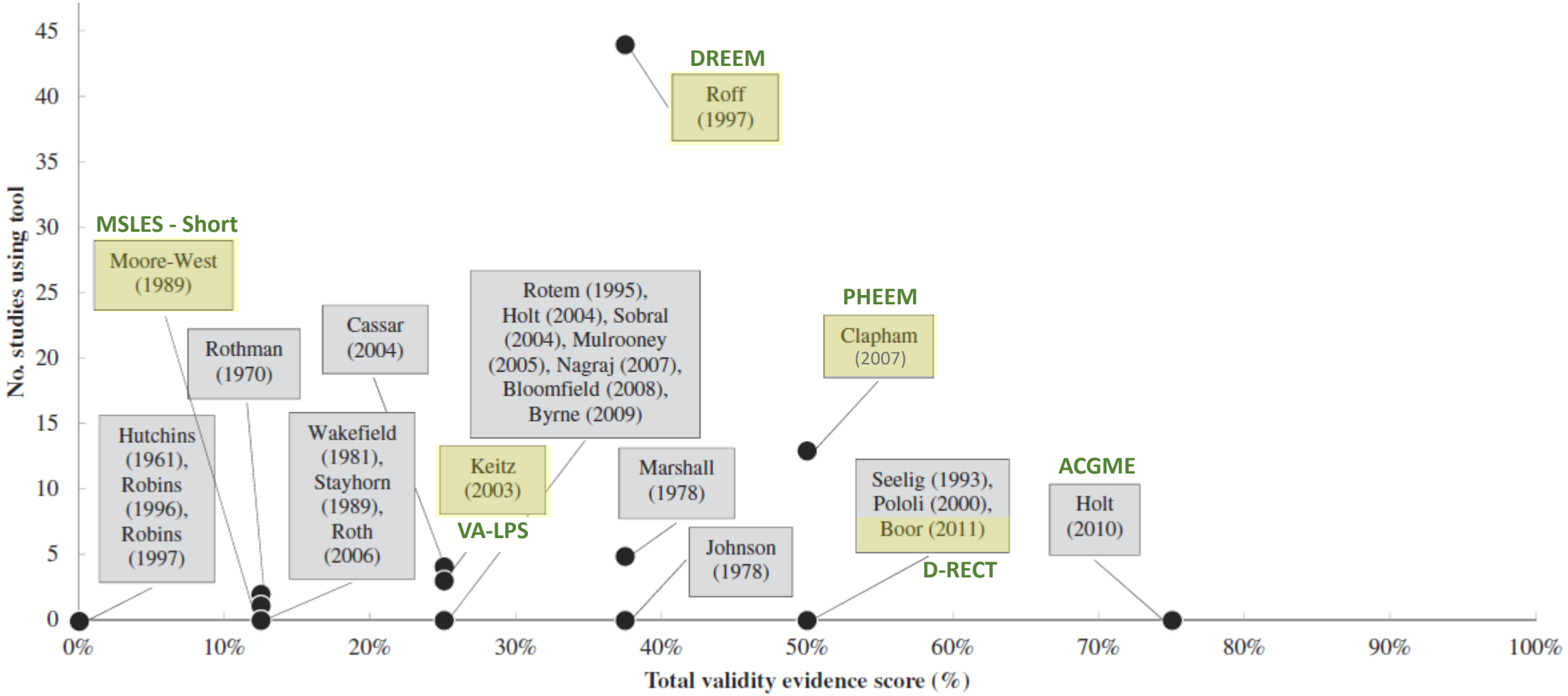
Mark of a new trend:

More recent LE assessment tools are informed by:

- Different conceptual frameworks
- Qualitative studies and surveys of stakeholders
- Instruments originally designed to assess the practice environment (e.g., safety culture, teamwork culture)

Schönrock-Adema, 2012

Validity Evidence for 28 learning environment tools published between 1961-2012



Colbert-Getz, 2014

Implementing a strategy for assessment

- For each outcome measure you previously identified, consider what instrument/data collection approach you could use, who can collect the data, and who are the stakeholders?

- Then, decide on how often you would collect and report data, who you would report the data to, and how you envision this would translate into quality improvement for your institution’s learning environment.

Examples / Models

Internal Report Card

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INTERPROFESSIONAL Clinical Learning Environment Report Card

ACADEMIC YEAR 2017-18

Learning Environment Assessment and Feedback (LEAF) Committee

- Vanderbilt University Medical Center
- Vanderbilt University School of Medicine
- Vanderbilt University School of Nursing

2018 LEAF COMMITTEE

Juan Pablo Arroyo, MD, PhD	Internal Medicine Chief Resident
Jesse Ehrenfeld, MD, MPH	Professor and Director for Health Sciences Education Research and LGBTI Health
Saif Hamdan	Medical Student
Jacqueline Harris	Medical Student
Katie Houghton, MBA (Development Lead)	Project Manager, Office of Health Sciences Education, School of Medicine
Kianna Jackson (Communications Lead)	Medical Student
Mary Ann Jessee, PhD, RN	Assistant Professor of Nursing, Prespecialty Level Director
Will Martinez, MD, MS	Assistant Professor of Medicine
John McPherson, MD	Vice-Chair for Education, Department of Medicine
Kendra Osborn	Nursing PhD Student
Shaunna Parker, MSN, WHNP-BC	Instructor in Nursing
Kate Payne, JD, RN, NC-BC	Associate Professor, Center for Biomedical Ethics and Society
Regina Russell, MA, MEd (Chair)	Director, Learning System Outcomes, Undergraduate Medical Education
Allison Shields, CPNP-PC	Nurse Practitioner, Department of Pediatrics
Clark Stallings	Medical Student
Rebecca Swan, MD	Assistant Dean, Graduate Medical Education
Kimberly N. Vinson, MD	Assistant Dean, Diversity Affairs, School of Medicine
Lynn E. Webb, PhD	Assistant Dean, Faculty Development, School of Medicine
Chris Wilson, MSN, RN-BC	Director, VUMC Nursing Education and Professional Development

ADVISORY MEMBERS

Donald Brady, MD	Senior Associate Dean, Graduate Medical Education and Continuing Professional Development and Senior Vice President for Educational Affairs, Vanderbilt University Medical Center
William O. Cooper, MD, MPH	Director, Vanderbilt Center for Patient and Professional Advocacy
William B. Cutrer, MD, MEd	Associate Dean, Undergraduate Medical Education
Amy E. Fleming, MD, MHPE	Associate Dean, Medical Student Affairs
Karen Hande, DNP, ANP-BC, CNE	Associate Professor of Nursing
Betsy Kennedy, PhD, RN, CNE	Assistant Dean for Non-tenure Track Faculty Affairs and Advancement, School of Nursing
Bonnie Miller, MD, MMHC	Senior Associate Dean for Health Sciences Education, School of Medicine and Executive Vice President Educational Affairs, Vanderbilt University Medical Center
Cathleen C. Pettepher, PhD	Assistant Dean, Medical Student Assessment
Mavis N. Schorn, PhD, CNM, FACNM	Senior Associate Dean for Academics, School of Nursing
W. Anderson Spickard, III, MD, MS	Assistant Dean, Education Design and Informatics, School of Medicine

WHAT ARE THE KEY DOMAINS?

LEARNER DEVELOPMENT

- Learner Feedback
- Educator Quality
- Learning Support

PATIENT CARE

- Transitions in Care
- Patient Safety
- Quality Improvement

PROFESSIONALISM

- Addressing Concerns
- Diversity and Inclusion
- Wellness

WHAT ARE THE DATA SOURCES?

Survey items are selected based on their alignment with selected learning environment topics. Sources with regular data collection mechanisms and those with longitudinal and/or national comparative data were prioritized. Data in this report card is collated and shared for internal improvement purposes. It should not be shared with external audiences and selected metrics should not be interpreted as an overall measure of organizational effectiveness. When available, national comparison data is listed in (parentheses) next to Vanderbilt data in the data addendum.

Medical Students

- Association of American Medical Colleges Graduation Questionnaire, Course and Clerkship Evaluations, Annual Learning System Survey

Nursing Students

- Vanderbilt Annual Learning Environment Survey

Medical Residents

- Association of Graduate Medical Education Annual Resident and Faculty Surveys, Clinical Learning Environment Reviews (CLER)

Medical Faculty

- Association of Graduate Medical Education, Annual Faculty Survey

Medical Center Employees

- VUMC Human Resources, Annual Climate and Pulse Surveys

Medical Center Patients

- VUMC Patient Experience, Press Ganey Patient Experience Surveys

Negative Behaviors

- Center for Patient and Professional Advocacy Veritas reporting, School of Nursing Dean's Office

- Committee
- Report Card
- Master Teachers
- Town Halls
- Department Chairs
- Learner-led Focus Groups
- Medical Center Task Force

MAYO CLINIC

Learning Environment and Educational Culture

PRIMARY VALUE

The needs of the patient come first

MAYO CLINIC VALUES

MAYO CLINIC

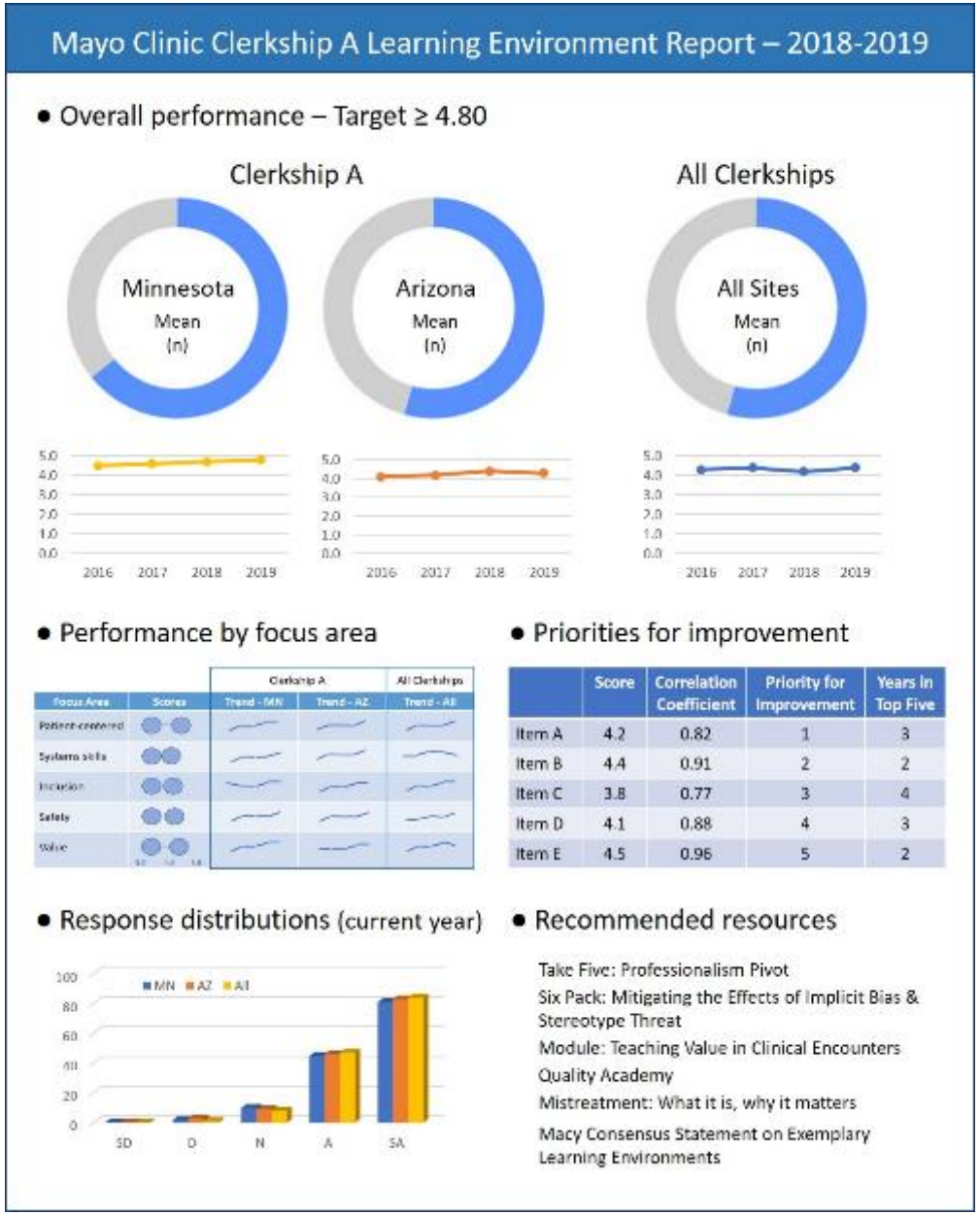
Learning Environment and Educational Culture Committee

Vision:

To support faculty, team members, students, and leaders in creating environments that reflect our values-driven culture, promote learning, and serve patients.

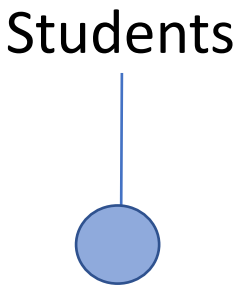
Compiling existing data into dashboards that are understandable, meaningful, and actionable:

- Clear graphics
- Relevant benchmarking
  - Across clerkships or sites
  - Varies by stakeholder
- Trend lines
- Different levels of data
  - Overall (high-level view)
  - Focus areas
  - Item level (emphasizing those that are key drivers of student experience – i.e., where small changes could have the most impact)

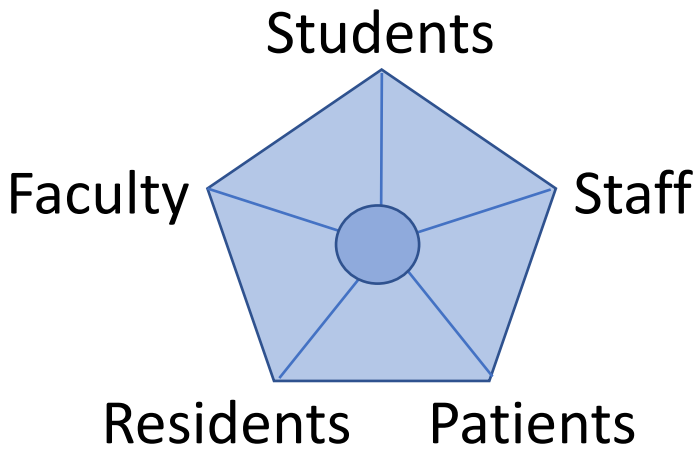


Current State → Future State

- Strong performance per existing data
- Primarily within education
- Varying measures
- Data from student perspective



- More nuanced and multi-faceted view
- Robust interface with practice
- Aligned measures
- Data from multiple perspectives



MCW CLINICAL LEARNING ENVIRONMENT COMMITTEE

MEDICAL COLLEGE OF WISCONSIN

KERN INSTITUTE
FOR THE TRANSFORMATION OF MEDICAL EDUCATION

Newly Formed (October 2018)

- Charged by the medical school curriculum committee – ad hoc committee
- Purpose: needs assessment for optimization of the CLE to promote education, wellness, collegiality, and professionalism for students, residents, faculty, staff, and patients
- Membership:
  - Students (across classes and campuses)
  - Faculty (across clinical sites/campuses/specialties, include UME and GME leaders as well as other trusted & well-respected faculty
  - Other members of the multidisciplinary team

Initial Recommendations (still draft)

- Transparent periodic report to include qualitative and quantitative data – clear graphics & benchmarking
- Reporting mechanism for challenging and positive events is a key barrier to our understanding and subsequent improvement of the CLE – recommend reform
- Increase collaboration/integration with GME and Clinical Partners
- Ongoing charge to the committee
  - Development & Dissemination of CLE Report
  - Visioning of Ongoing Quality Improvement Projects – early examples:
    - Speak Up (See Something – Say Something)
    - Psychological Safety in the CLE
    - Reflection/Narrative of Character in the CLE
    - Celebrating CLE Exemplars
    - Standard Setting – mistreatment and microaggressions

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Reporting Mechanism

- Online (app/web)
- Asynchronous
- Reporter determines level of anonymity, report of review
- “Positive and Negative”
- Disclaimer/Decision Support – “if report is about x/y, stop now and dial…”
- Group review of reports – mixed group of faculty, staff, and learners
  - No decision-making responsibility for grades and/or residency decisions
  - Not student/academic affairs/Deans
  - But act as liaisons between reporter and academic leaders (course/clerkship directors, student/academic affairs, department chairs/division chiefs, curriculum committee, etc)
  - Report back to students and to the CLE committee for inclusion of data in the CLE report
- Concurrent standard-setting on mistreatment/microaggressions

LACE = Learning and Caring Environment

Vision

Support clinical faculty to co-create learning environments that optimize learning and wellbeing for all involved

UCSF

LACE

- Data driven
- Team-oriented
- Innovation focused
- Diverse, Inclusive, Equitable

LACE

Report
to chair, health system and education leadership

Recommendations:

- Required resources and support
- Space, technology
- Organization, workflow
- Education and training

Faculty Development:
Develop, implement and sustain workplace-based faculty development

LACE Assessment: Multisource Data Collection

- Routine evaluations (Clerkship evaluations, GME surveys, Faculty surveys)
- Ad-hoc surveys and reports (wellbeing, rounding project, SAFE reporting)
- Direct observations
- Focus groups and interviews

And: data on diversity, evaluation and assessment processes, learner participation in QI projects

Vision pillars Focus Areas	Health systems & med ed: shared goal of improving health	Work is learning; learning is work	Diverse perspectives/inclusive environment	Continuous improvement for individuals, teams and systems
Diversity and Inclusion	Learners are exposed to the full scope of patients in the health system	Attention to equity pedagogy in patient care	Environment is welcoming, free of bias, respectful; professional communication/ relationships	Focus on wellbeing, professional identity formation and character
Outcomes-based assessment	Data on patient outcomes shared with learners	Feedback/direct observation as part of workplace learning	360 evaluation or feedback	Master adaptive learning; coaching; assessment for learning
Inquiry		Promotion of clinical reasoning/ Integration of foundational sciences		Promotion of inquiry
Interprofessional collaboration	Learners are integrated into interprofessional teams	Interprofessional collaboration in the workplace	Issues of hierarchy and power differentials	Team training; Team approach to systems projects
Systems skills	Learners are effectively integrated in healthcare delivery	Systems issues addressed during clinical care		Learner participation in systems projects/ QI&PS activities
Value-based care		Value discussed as part of clinical care		
Technology		Technology to aid work/learning		

Questions? Suggestions? Ideas?