

The background features a low-angle shot of modern architecture. On the left, a building with a prominent orange, grid-like facade is visible. In the center, a tall, slender tower with a glass exterior reaches towards the sky. On the right, another modern building with a glass facade is partially visible. A large, dark blue rectangular overlay covers the central portion of the image, and a bright orange triangle is positioned in the bottom right corner of this overlay.

CREATING AN OPTIMAL LEARNING ENVIRONMENT

Educator Development Forum

March 3, 2021

LEARNING OBJECTIVES

At the end of this sessions, participants should be able to:

- Define learning environment and understand its impact on learners
- Understand the key elements of a positive learning environment
- Incorporate some best practices to promote effective learning environments

LEARNING ENVIRONMENT

What is it?

The social interactions, organizational cultures, and structures, and physical and virtual spaces that surround and shape participants' experiences, perceptions and learning.

What influences it?

Interactions with peers, staff, faculty, patients, curriculum, facilities, and organizational infrastructure.

Why does it matter?

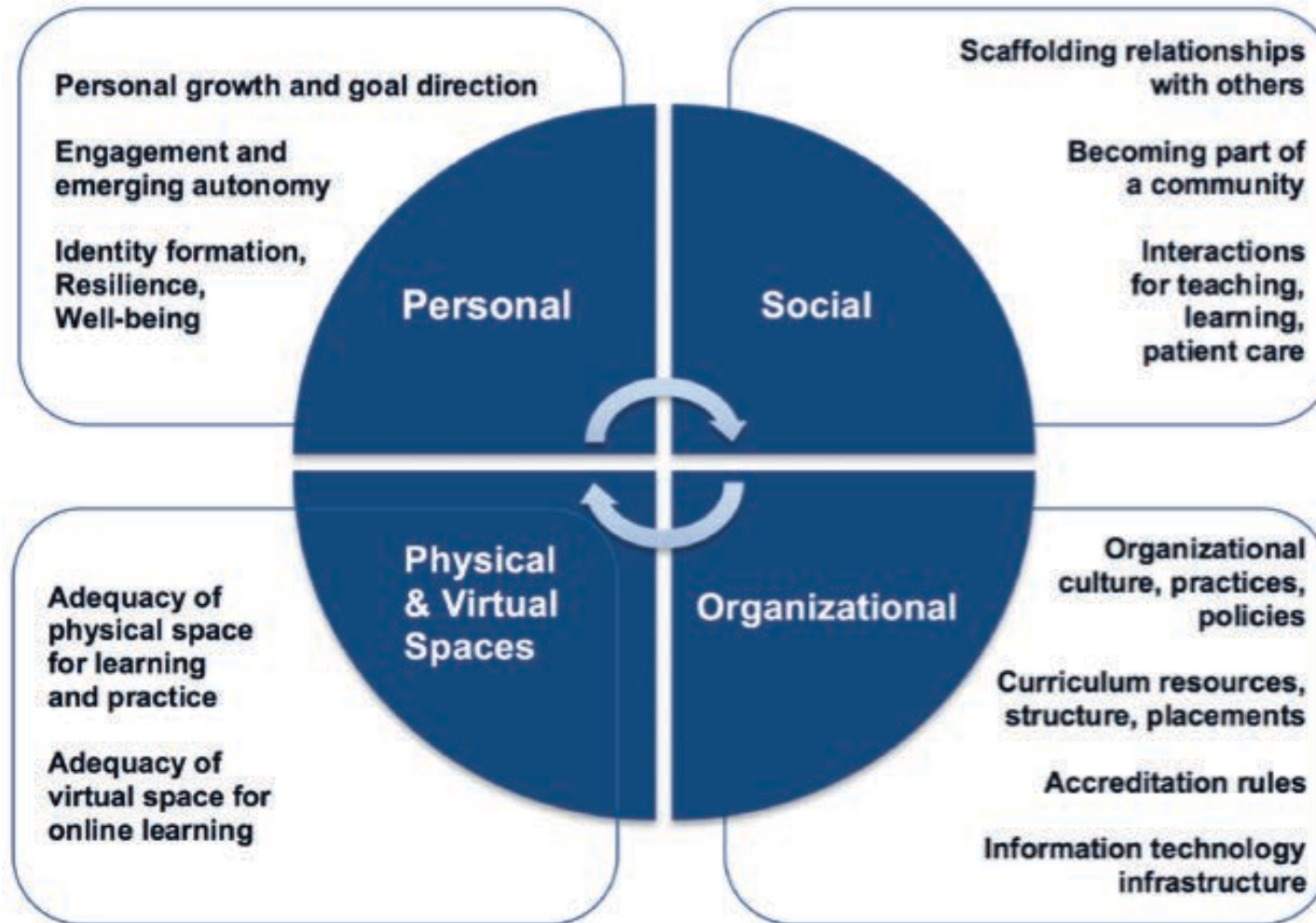
It is a significant determinant of trainees' attitudes, knowledge, skills, academic achievement, sense of wellbeing, and behaviors.

A positive learning environment helps learners succeed, affects their moral development, and models a humanistic approach to medicine.

IMPACT OF LEARNING ENVIRONMENT

Study	Learners Studied	Conclusions
Dunham, et al. 2017	Longitudinal survey of learning environment (LE) completed by 4,262 students at 23 U.S. and Canadian medical schools.	Perceptions of medical school LE decline as students transition to the clinical LE. Largest declines in work–life balance and informal student relationships in the 3rd year. Perceptions rebound slightly after Match day.
Wayne, et al. 2013	Survey completed by 267 first year medical students from 5 consecutive classes that related LE perception to performance on USMLE Step 1, taken approximately six months later.	Three of the five LE subscales statistically associated with Step 1 performance ($p < 0.05$): meaningful learning environment, emotional climate, and student–student interaction. A one-point increase in subscale rating associated with increases of 6.8, 6.6, and 4.8 points on the Step 1 exam.
SN van Vendeloo, et al. 2018	Cross sectional survey of 1,231 residents from 33 specialties training in Denmark assessing perceptions of LE (via SPEED score) and resident burnout.	Strong and consistent inverse association between the perceived quality of the learning environment and burnout among residents (OR 0.54 CI 0.46 to 0.62, $p < 0.001$)
N Lee, et al. 2017	276 surgery resident across 50 programs surveyed regarding academic support and resources.	Residents perceiving adequate support to succeed had less burnout, better resilience, better job satisfaction, better organizational support, and were more likely to have high performance on in-service exams.

COMPONENTS OF LEARNING ENVIRONMENT



Safety

- Learners must feel welcomed, respected, and assured of safeguards to protect their physical and psychological safety.

Engagement

- Learning environments (LEs) should facilitate learner engagement and promote collaborative learning.

Connectedness

- LEs must facilitate a sense of belonging within the learning community and promote the social construction of learning that happens when learners and educators feel connected.

Infrastructure

- Spaces require infrastructure support to optimize resources, including support staff, hardware and software, facilities improvement and maintenance, leadership, financial support, and accountability structures.

Access

- Learners and educators need access to a variety of spaces, technology, and resources to support learning. ADA compliance and health equity issues must be addressed.

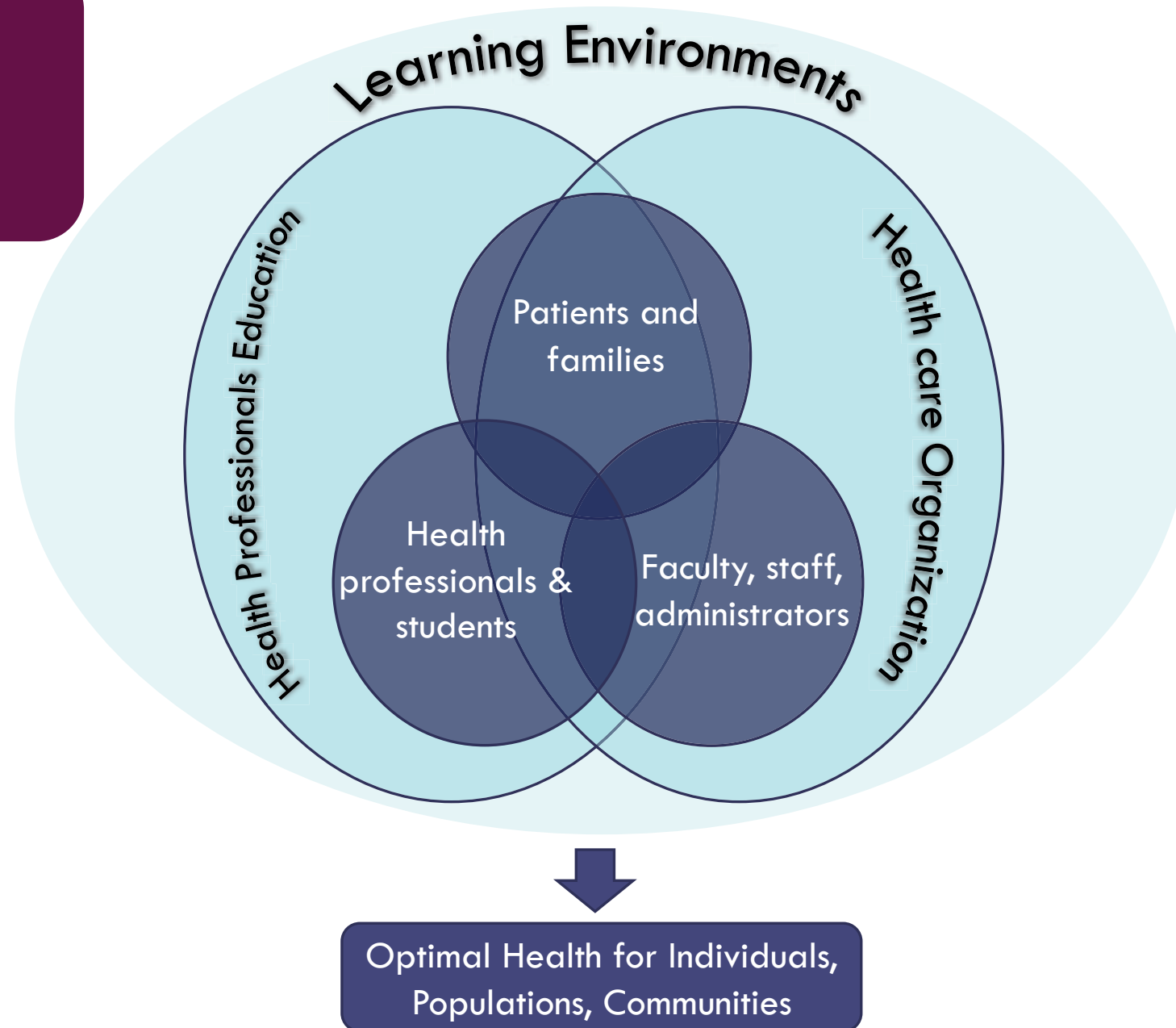
Climate

- In the design of facilities and virtual spaces, sensory cues of art, music, institutional symbols, history, and collaboration all create a tone. These should represent diverse perspectives that promote a feeling of inclusion.

SMALL GROUP DISCUSSION

- Take one element and discuss your experiences and recommendations for improvement

**Model for
Exemplary
Learning
Environments**



EXEMPLARY LEARNING ENVIRONMENTS

Key Tenets

“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.”

Everyone who participates in health professions learning environments shares the same goal: better health for all.

Exemplary learning environments—and the organizations of which they are part—are fully committed to diversity, equity and inclusivity.

In exemplary learning environments, all participants—including organization leaders, administrators, practitioners, educators, staff, and students as well as patients, families, and community members—are teachers *and* learners.

Exemplary learning environments support the well-being of all participants.

SMALL GROUP DISCUSSION

- Is there an ideal learning environment for the medical profession?
 - Does that vary...
 - By individual learner?
 - By level of training?
 - By clinical specialty or practice site?
- As educators – what can we control and not control in learning environments?

KNOW YOUR LEARNERS

- Understand the course/residency expectations for trainees in clinical settings and criteria for assessment and/or grading
- Determine where a trainee is in their clinical experience to calibrate expectations
- Take interest in trainees' background, current learning goals, and future career plans
- Observe the learner engaging in bedside clinical assessments and patient care.
- Recognize learner distress

SET EXPECTATIONS

- Ensure trainee knows location, meeting time, expected hours, dress code, equipment needed

- Make your expectations explicit
 - Time limit for patient assessment
 - Presentation style
 - Role on team
 - When/how feedback will be given





BUILD COMMUNITY

Have team members make introductions and orient new learners to others' roles.

Incorporate ice breakers

Model the inclusion of patients, families and other health team members in medical decision making

Include trainees in E-Chat and email conversations regarding their patients' care.

Engage with learners during day outside of clinic visits or inpatient rounds (for teaching, feedback, coffee run, etc.)

Be an ally

BE PREPARED

- Be deliberate about what is being taught and why it is important
 - Formulate 1-2 teaching points per clinic session or rounding day
-

BE ENGAGED

- During learner presentations, make eye contact, use a supportive tone of voice, and appreciative facial expressions to create a sense of safety
 - Observe the learners engaging in clinical care
 - Be available/approachable and willing to pitch in with workload
-

BE KIND

- Avoiding interrupting learners before they finish presenting case
- Engage in artful questioning



BE LEARNING CENTERED

Be willing to say “I don’t know”.

Debrief mistakes and challenging situations.

Empower learners to teach you.

Welcome questions and dissenting voices. Be willing to adopt a different but equal plan.

Avoid work without education- make the value of a task clear.

Be committed to continuous improvement- accept and give feedback as the norm.

REFERENCES

- Bannister SL, Hanson JL, Maloney CG, Dudas RA. Practical Framework for Fostering a Positive Learning Environment. *Pediatrics* Jul 2015, 136 (1): 6-9
- Chan CY, Sum MY, Lim WS, Chew NW, Samarasekera DD, Sim K. Adoption and correlates of postgraduate hospital educational environment measure (PHEEM) in the evaluation of learning environments - a systematic review. *Med Teach*. 2016;38:1248–55
- Dunham L, Dekhtyar M, Gruener G, et al. Medical Student Perceptions of the Learning Environment in Medical School Change as Students Transition to Clinical Training in Undergraduate Medical School. *Teaching and Learning in Medicine*. 2017,29(4):383-391
- Irby DM. Improving environments for learning in the health professions. *Proceedings of a conference sponsored by the Josiah Macy Jr. Foundation*. April 2018. New York, NY Josiah Macy Jr Foundation https://macyfoundation.org/assets/reports/publications/macy_monograph_2018_webfile.pdf
- Lee N, Appelbaum N, Amendola M, Dodson K, Kaplan B. Improving resident well-being and clinical learning environment through academic initiatives. *J Surg Res*. 2017; 215:6-11

REFERENCES

- Schonrock-Adema J, Bouwkamp-Timmer T, Van Hell EA, Cohen-Schotanus J. Key elements in assessing the educational environment: where is the theory? *Adv Health Sci Educ Theory Pract*. 2012;17:727–42
- Schönrock-Adema J, Visscher M, Raat AN, Brand PL. Development and validation of the scan of postgraduate educational environment domains (SPEED): A brief instrument to assess the educational environment in postgraduate medical education. *PLoS ONE*. 2015;10
- Tackett S, Wright S, Lubin R, Li J, Pan H. International study of medical school learning environments and their relationship with student well-being and empathy. *Med Educ*. 2017;51:280–9
- van Vendeloo SN, Prins DJ, Verheyen C, Prins JT, et al. The learning environment and resident burnout: a national study. *Perspect Med Educ*. 2018;7:120–5
- Wayne SJ, Fortner SA, Kitzes JA, Timm C, Kalishman S. Cause or effect? The relationship between student perception of the medical school learning environment and academic performance on USMLE Step 1. *Med Teach*. 2013 May;35(5):376-80

Item or type of data	1 Community of peers	2 Faculty relationships	3 Academic climate	4 Meaningful engagement	5 Mentoring	6 Inclusion and safety	7 Physical space
JHLES Item*							
How connected do you feel to other SOM students? ²	0.85						
How supported do you feel in your personal and professional pursuits by other SOM students? ²	0.77						
It's been easy to make friends at the SOM.	0.73						
I feel a sense of community at the SOM.	0.67						
To what extent have you felt a sense of belonging during your time as a student at the SOM? ²	0.63						
I've encountered an abundance of positive, inspiring role models among fellow students at the SOM.	0.61						
I feel that the SOM faculty I encounter are supportive of my professional goals.		0.70					
I feel that SOM faculty members have taken the time to get to know me.		0.67					
I feel that the SOM faculty I encounter genuinely care about my well-being.		0.64					
I've encountered an abundance of positive, inspiring faculty role models at the SOM.		0.61					
There are faculty members that I feel comfortable confiding in when important concerns come up.		0.60					
The faculty advisors in the Colleges Advisory Program are readily accessible and interested in students.		0.54					
Our medical school's curriculum allows me to use my preferred learning style.			0.75				
I feel that course exams and assessments test my knowledge and abilities fairly.			0.70				
I understand the goals and objectives of the SOM curriculum.			0.52				
To what extent do you trust that the institution has fulfilled your needs as a medical student? ⁴			0.51				
The workload during medical school is manageable.			0.53				
The SOM engages students as meaningful participants.				0.69			
The SOM is flexible and responsive to my needs as a student.				0.61			
I feel that I have a say in decision making about courses and curricular changes.				0.60			
The SOM encourages scholarship and innovation.				0.51			
I've found a mentor in a research field that interests me.					0.74		
I've found a mentor in a clinical specialty or discipline that I am passionate about.					0.73		
I am concerned that students are mistreated at the SOM. ¹						0.72	
I sense there is discrimination based on gender, race, ethnicity, or sexual identity at the SOM. ¹						0.47	
I feel concerned at times for my personal safety at the SOM. ¹						0.46	
The preclinical SOM building has a significant effect on my perception of the learning environment.							0.65
The work spaces where clinical teaching occurs contributes positively to my sense of the SOM learning environment.							0.62

Johns Hopkins
 Learning
 Environment Scale

Content (Cronbach's α 0.71)
The feedback provided by my supervisor is focused on my strengths and weaknesses
In this rotation, evaluations are useful discussions about my performance
My supervisors are all in their own way positive role models
The level of autonomy given to me is appropriate to my level of training
The training in this post prepares me for my future career
Atmosphere (Cronbach's α 0.75)
The supervisors are approachable and helpful
Supervisors, nursing staff, other allied health professionals and residents work together as a team here
There is (are) NO attending physician(s) who have a negative impact on the educational climate
My supervisor supports me in difficult situations (e.g. handover)
The supervisors are respectful towards residents
Organization (Cronbach's α 0.67)
Teaching and learning are emphasized in this department
Good clinical supervision is available at all times
The staff is clear about my duties and responsibilities
My program director reserves time to supervise/counsel me
My program director prevents me from having to perform too many tasks irrelevant to my learning

Scan of
 Postgraduate
 Educational
 Environment Domains
 (SPEED)

MEASURING THE QUALITY OF THE LEARNING ENVIRONMENT

JOHNS HOPKINS LEARNING ENVIRONMENT SCALE

How connected do you feel to other SOM students?^d

How supported do you feel in your personal and professional pursuits by other SOM students?^d

It's been easy to make friends at the SOM.

I feel a sense of community at the SOM.

To what extent have you felt a sense of belonging during your time as a student at the SOM?^d

I've encountered an abundance of positive, inspiring role models among fellow students at the SOM.

Community of Peers

I feel that the SOM faculty I encounter are supportive of my professional goals.

I feel that SOM faculty members have taken the time to get to know me.

I feel that the SOM faculty I encounter genuinely care about my well-being.

I've encountered an abundance of positive, inspiring faculty role models at the SOM.

There are faculty members that I feel comfortable confiding in when important concerns come up.

The faculty advisors in the Colleges Advisory Program are readily accessible and interested in students.

Faculty Relationships

I am concerned that students are mistreated at the SOM.[†]

I sense there is discrimination based on gender, race, ethnicity, or sexual identity at the SOM.[†]

I feel concerned at times for my personal safety at the SOM.[†]

Inclusion and Safety