Numeracy
WORK HABITS
Written Communication
Social Interaction
Social-emotional
Oral Communication
number sense
work ethic
Social Skills
Response to feedback
Able to access learning skills
Pacing
Speed
Distractability
Exposure
Reading level
interest
Focus
Retention
Stability (outside school)
Collaborative Spirit
Preparedness
Literacy
Organization
(keeping handouts & notes)
Norms for tasks
Willingness to Ask Questions
Attention span
Interest level
literacy skills
Comfort in asking for help
reasoning skills
Visual Learning
Language

Balancing Multigenerational Learners and Educators

Marie Cavuoto Petrizzo MD, MSEd, FAAAAI

Associate Dean for Medical Education
Associate Professor of Science Education and Pediatrics
Donald and Barbara Zucker School of Medicine at Hofstra/Northwell

Learning Objectives:

- **Recognize generational characteristics** that influence learning preferences, communication styles, and workplace expectations in medical education.
- **Identify common challenges** that arise in a multigenerational learning environment and their impact on fellowship training.
- **Apply strategies to bridge generational gaps**, including blended learning approaches, tailored feedback methods, and effective communication techniques.

Please note: Chat GPT was utilized in preparing this talk (e.g., related to some content, case study generation, and tables).

Overview

- Generational Characteristics
- Case study
- Challenges of the Multigenerational Learning Environment
- Balancing Multigenerational Needs
- Benefits of Multigenerational Learning
- Back to our case…
- Takeaways
- Q & A

AAAAI/WAO
JOINT CONGRESS
SAN DIEGO, CA, USA Feb 28-March 3, 2025

Audience Response and Q&A

Please scan the QR code to participate in the Q&A or polling.

Or Log in to the AAAAI App find this session and click on the link.

Audience Response:

Which generation are you?

- A. Baby boomers (Born 1946-1964)
- B. Gen X (Born 1965-1980)
- C. Millennials (Born 1981-1996)
- D. Gen Z (iGen) (Born 1997-2012)
- E. Gen alpha (Born 2012-)

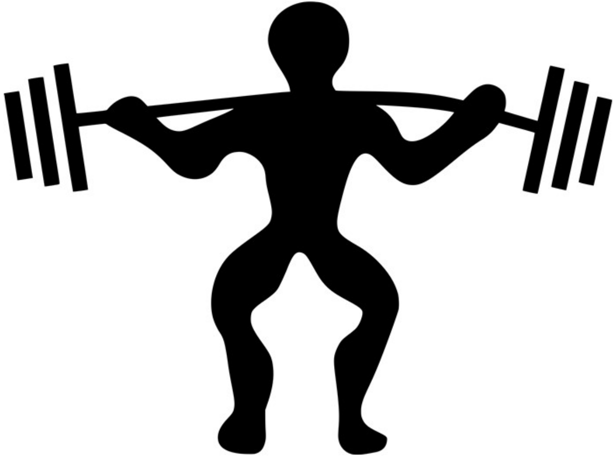
Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: Which generation are you?

Audience Response:

What do you think is the biggest strength of your generation in medical education?



Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: What do you think is the biggest strength of your generation in medical education?

We need to remember across generations that there is as much to learn as there is to teach.
Gloria Steinem

- One's generational and social contexts affect:
  - learning styles
  - communication preferences
  - expectations of how to act
- Be cautious about
  - generalizations
  - attributing differences amongst generations to specific individuals

> *Be patient. Be excited. Embrace them. Learn from them. At the same time, be prepared to teach them. Ignore stereotypes. Remember that there once was an older generation that viewed you with the same concerns."*
> *Jeff Corbin, APPrise Mobile*

Attribute	**Baby Boomers** **(Born 1946-1964)**	**Gen X** **(Born 1965-1980)**	**Millennials** **(Born 1981-1996)**	**Gen Z / iGen** **(Born 1997-2012)**
Technology	**May need more support with technology** **Prefer in-person learning**	**Comfortable with technology** **May need support with newer technologies**	**Tech-Proficient** **Online learning platforms**	**Digital Natives** **Prefer interactive, multimedia content**
Learning Style	**Prefer lectures and printed materials** **Prefer face-to-face interaction**	**Hands-on, apprenticeship model** **Find information efficiently and make decisions with less readily available data**	**Organized learning environments** **Clear expectations** **Teamwork and group projects**	**Visual learners** **Structured learning environments with clearly defined learning objectives and expectations** **Group and peer learning**
Feedback	**Value thorough explanations and step-by-step guidance**	**Less structured, more direct** **Adaptable, expected to be resilient**	**Appreciate regular feedback and positive reinforcement**	**Seek regular feedback and constructive criticism.**
Motivation	**Desire to learn new things and expand their knowledge**	**Career advancement**	**Personal and professional growth**	**Desire to make a difference in the world**

Case Study

Dr. Jen Z:
First year A and I fellow

Dr. Genna X :
Experienced A and I clinician for 25 years

Case: A 17-year-old patient presents to the ER at 7 pm with significant angioedema due to an unclear trigger. The ER physician calls fellow Dr. Jen Z to consult for A and I. She is asked to evaluate the patient, develop a comprehensive management plan, and confer with her attending, Dr. Genna X.

Audience Response

What challenges do you foresee occurring in this mutigenerational learner and educator scenario?

Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: What challenges do you foresee occurring in this mutigenerational learner and educator scenario?

What do we hear from TPDs?

- Extensive questioning by residents: “Why do I have to learn that?”
- Too much reliance on technology, not thinking (i.e. cut and paste electronic records)
- Poor lecture attendance – residents stating it should not be required, requesting materials to be placed on-line
- Lack of participation in large lecture formats
- Increased emphasis on activities outside of work
- Professionalism issues: Dress, cell phones, taking time off when they want it

Metro D, Helkowski W, Gaines A. Talk or Text: Generational Differences and Their Effect on Graduate Medical Education. *MedEdPORTAL*. 2010;6:8172. https://doi.org/10.15766/mep_2374-8265.8172

What do we hear from residents?

- Trying to strike a work/life balance
- Cell phones and electronics help with connection to outside life and with enjoyment of the work day
- Use of technology increases efficiency
- Want option to choose what they learn – some topics do not appear relevant
- Why risk embarrassment in front of peers by participating?

Metro D, Helkowski W, Gaines A. Talk or Text: Generational Differences and Their Effect on Graduate Medical Education. *MedEdPORTAL*. 2010;6:8172. https://doi.org/10.15766/mep_2374-8265.8172

Begin to consider:

What strategies could be implemented to ensure an effective learning environment?

Balancing Multigenerational Needs: How do we bridge the differences?

Gen Z: Approach to Learning

- Don't spent time memorizing things that can easily be looked up
- Value practical application & sharing of ideas vs. theoretical understanding
- Want immediately useful information
  - information that is directly relevant to their daily work
- ✓Want flexibility and autonomy in learning and completing tasks
- Value experiential & digital methods

Metro D, Helkowski W, Gaines A. Talk or Text: Generational Differences and Their Effect on Graduate Medical Education. *MedEdPORTAL*. 2010;6:8172. https://doi.org/10.15766/mep_2374-8265.8172

Traditional lectures are out!

Gen Z is a multitasking generation

Byte-size the information

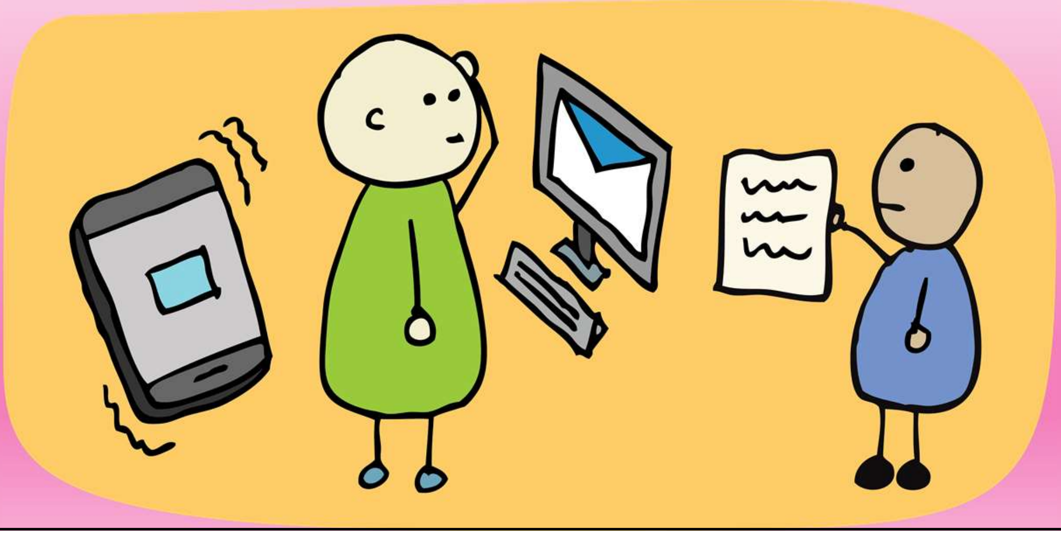
- Students on laptops switch between tasks every **19 seconds** (Reeves 2014)
- More than 75% of students' computer windows were **open less than one minute** (Yeykelis et al. 2014)

- **Byte-sized content preferable** (Lerchenfeldt 2020)
- **Video content over static content** (Pappano 2018)
- **Blend outside resources with instructor-created material** (Loveland 2017)

So what can we do?
Blended learning…

- "Flipped classroom" with case-based learning instruction
- Team based learning
- Online modules/podcasts/tik-toks
- Simulations/Hands on workshops
- Gamification
- Small group discussion; think-pair-share, critical thinking activity jigsaw learning
- Incorporation of board review
- Visual Aides (Sketchy)
- MUST INCLUDE RELEVANCE of content!

Communication



Audience response: What is your preferred method of communication with colleagues and trainees?

A. Face-to Face
B. Phone
C. Video (Facetime, Zoom, Teams)
D. Email
E. Text
F. Through the EMR
G. TEAMS messaging (or similar)

Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: What is your preferred method of communication with colleagues and trainees?

Communication with Patients

- Face-to-Face
- Video consults
- Telehealth
- Telephone

Generation Z has spent so much time with electronic communication

May affect in-person communication skills

Assess learners' communication skills early

May need coaching

- Role playing, direct observation, self-reflection and feedback on performance

Eckleberry-Hunt J, Lick D, Hunt R. Is Medical Education Ready for Generation Z? J Grad Med Educ. 2018 Aug;10(4):378-381. doi: 10.4300/JGME-D-18-00466.1. PMID: 30154963; PMCID: PMC6108364.

Interprofessional communication

- **Set expectations (clear communication protocol within the team)**

  How urgent is the issue?

  ☎ *Immediate → Face-to-face discussion or phone call*

  ✉ *Routine → Email, EMR message*

- **Create psychological safety**
- **Consider dedicated times for in-person discussions, combined with guidelines for electronic communication**

Technology

Audience Response: How comfortable are you with using technology for teaching and patient care?

A. Not comfortable
B. Fairly comfortable
C. Comfortable
D. Very Comfortable
E. Proficient

Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: How comfortable are you with using technology for teaching and patient care?

Resident Experience with Technology

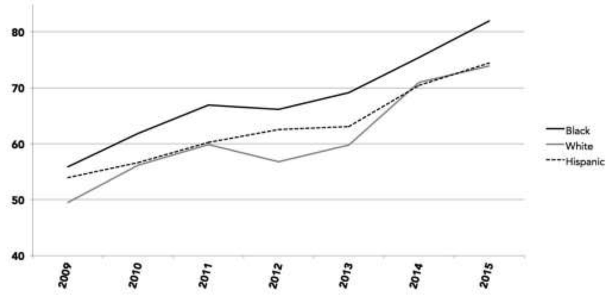


Figure C.4. Percentage of 8th graders who use social networking sites every day or nearly every day, by race. Monitoring the Future, 2009–2015.

http://www.jeantwenge.com/wp-content/uploads/2017/08/igen-appendix.pdf

- Gen Z has not lived in a world without technology
- Process information quickly
- Rapid online research
- Comfortable using social media, and online medical communities to solicit medical advice, crowd source

Embrace Technology!

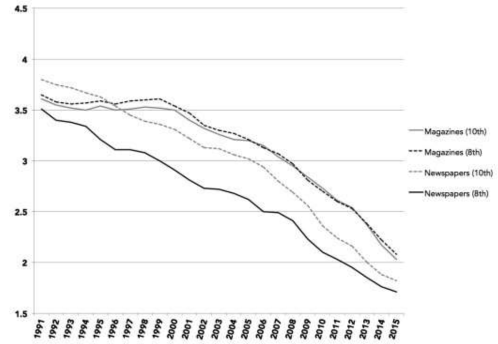


Figure A.1. 8th and 10th graders' print media use, 1–5 scale. Monitoring the Future, 1991–2015.

http://www.jeantwenge.com/wp-content/uploads/2017/08/igen-appendix.pdf

- **Leverage technology and innovation to meet the expectations of younger generations.**

What can we do?

- Do not need to emphasize memorization of content easily searchable on smartphone
- Incorporate use technology for practice of skills and teamwork (low risk)
- Increase efficiency (task automation, administrative work)

Technology for Improving Patient –Physician Interaction

AI Scribes	Advantages: interface with EMR; counter-intuitively, handing off scribing to AI may allow for more natural interactions with patients.
IPADS	Advantages: Integrates medical education content, clinical programs, and assessment; use in clinical settings (rounding, communication with patients, patient education, real time lab reporting, etc.)
Virtual Reality, Augmented Reality, Simulation Training	Advantages: Low stakes practical training of clinical skills
Biosensors	Advantages: Can detect patient data: EKG, vital signs, and (soon) biomarkers from sweat, sputum, etc. Useful for building a picture of a patient's life outside of one visit a year.

AI in A & I Education

- **Personalized Learning**: AI can analyze trainees' learning patterns and tailor educational content to their individual needs
- **Assessment and Feedback**: AI can automate the assessment process, providing instant feedback on trainees' performance and identifying areas that need improvement.
- **Research Assistance**: AI can assist in medical research by analyzing large datasets, identifying patterns, and generating hypotheses, which can be invaluable for students involved in research projects.
- **Clinical Decision Support**: AI systems can help students make informed clinical decisions by providing evidence-based recommendations and guidelines.

artificial
intellige
AI
research
problems
subfields
intelligent
also
particular
issues
science

Recommended Review: Khoury, P., Srinivasan, R., Kakumanu, S., Ochoa, S., Keswani, A., Sparks, R., & Rider, N. L. (2022). A Framework for Augmented Intelligence in Allergy and Immunology Practice and Research—A Work group report of the AAAAI Health Informatics, Technology, and Education Committee. *The Journal of Allergy and Clinical Immunology in Practice*, *10*(5), 1178–1188. https://doi.org/10.1016/j.jaip.2022.01.047

Feedback

Technology → Instant Gratification → Timely Feedback

Audience Response: How do you like to receive feedback?

A. In real-time, On-the-fly
B. During routinely scheduled assessment periods
C. Formal
D. Informal
E. Written
F. Verbal
G. In-person
H. Digital (email, electronic evaluation, etc.)

Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: How do you like to receive feedback?

Generational Differences in Receiving Feedback

Generation	Receiving Feedback
Millennials/Gen Y (1981-1996)	• informal and formal, frequent feedback & guidance • clear expectations & specific goals • seeks personal growth & development opportunities • positive and constructive; may be sensitive to perceived personal criticism
Gen Z/iGen (1997-2012)	• structured and formal • specific and actionable, goal oriented • seeks to apply feedback quickly • less tolerant of hierarchy

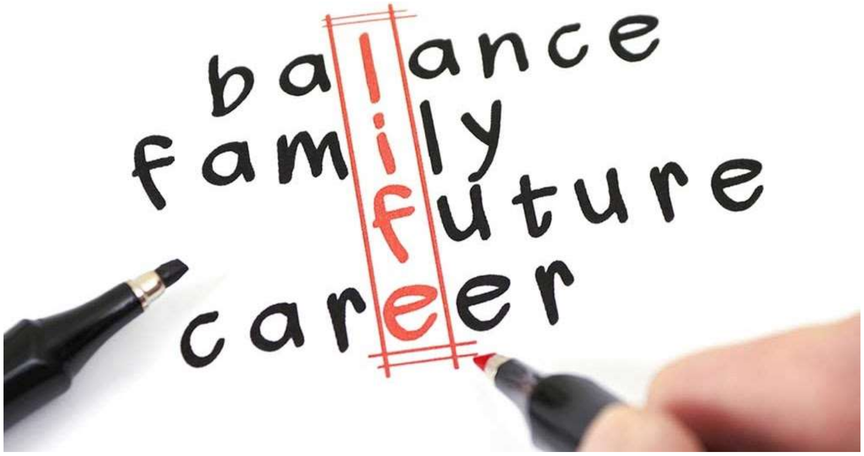
---

Giving Feedback

- Get comfortable giving feedback and creating a culture of feedback (normalize)
- Feedback should be timely, specific, aligned with training objectives and goals
- Start with trainee self-assessment/self-reflection
- Ground feedback in concrete observations, avoiding vague generalizations
  - **Situation**: *"When you…."*
  - **Observation: "***I noticed/ I observed/I saw/I heard…"*
  - **Impact:** "….*from my perspective, the impact on the patient was (describe)…"*
  - **Advocacy:** *" I think that/It is important to know…"*

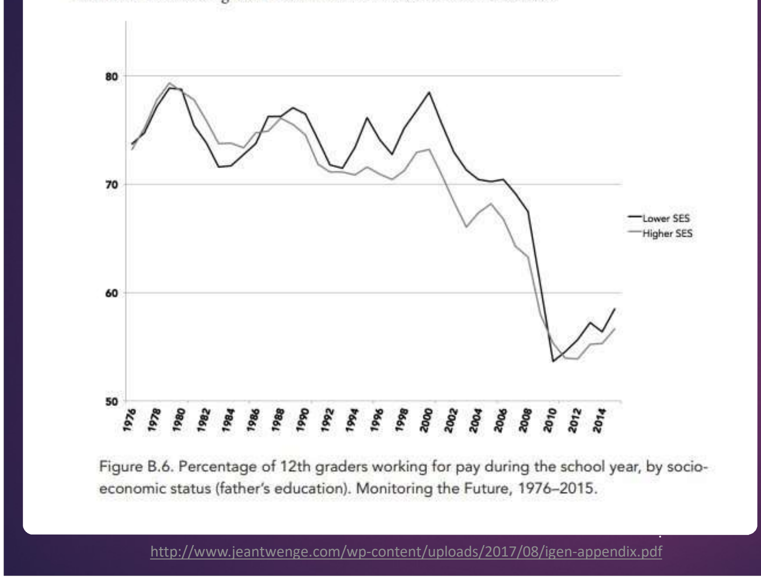
Giving Feedback: Structure

- Feedback Sandwich:
  - Start with positive
  - Sandwich with constructive critique
  - End with positives
- Collaborate on action plan / SMART goal (Specific, Measurable, Attainable, Relevant, Time-bound)
- Offer resources
- Document/Follow up


balance
family
future
career
life

Work/Life

Gen X	Millennials	Gen Z (iGen)
Work Life Integration	Seeking flexible schedules	Work-life separation
Long hours seen as commitment	Value experiences alongside work	Mental health & well-being prioritized



The decline in working at all was similar within socioeconomic statuses.

Figure B.6. Percentage of 12th graders working for pay during the school year, by socio-economic status (father's education). Monitoring the Future, 1976–2015.

http://www.jeantwenge.com/wp-content/uploads/2017/08/igen-appendix.pdf

For many trainees, this is their first job...

- Create opportunities for open dialog – ask question and understand they why without judgement of dismissal
- Acknowledge their feelings even if you don't agree
- Be explicit about expectations - Discuss expectations at start of rotation/residency; Provide feedback as needed
- Identify areas for improvement/ outdated work flows/policies
- Model healthy behavior
- Mentor
- Utilize technology
- Provide resources
- Celebrate successes!

Benefits of multigeneration learning environments

(It is mutually beneficial!)

Cultivates a culture of continuous learning and professional development

- **Enhanced learning through diverse perspectives**
- **Improved communication and collaboration skills**
- **Mentorship**
- **Increased empathy and cultural understanding**
- **Enhanced professional identity formation**
- **Improved teaching effectiveness**
- **Increased faculty engagement and satisfaction**
- **Opportunity to stay current with evolving practices**

Back to our case…

- Case: A 17-year-old patient presents to the ER at 7 pm with significant angioedema due to an unclear trigger. The ER physician calls fellow Dr. Jen Z to consult for A and I. She is asked to evaluate the patient, develop a comprehensive management plan, and confer with her attending, Dr. Genna X.

Category	**Dr. Jen Z (First-Year Fellow, Gen Z)**	**Dr. Genna X (Experienced Attending, Gen X)**
Learning Methods	Uses digital resources (UpToDate, AI tools, guideline apps) to support decision-making.	Prefers case-based bedside learning, focusing on clinical pattern recognition and hands-on experience.
Communication	Leans towards EMR documentation and messaging for clarity.	Prefers a phone call to discuss key findings and next steps.
Feedback Exchange	Prefers structured, constructive feedback with learning points.	Provides direct, real-time feedback based on clinical experience.
Work-Life Balance	Values work-life balance but understands the need for after-hours commitment.	Comfortable staying late for critical cases, expects dedication.

Category	Strategy to Bridge the Gap
Learning Methods	**Blended approach** – Dr. Z researches guidelines, while Dr. X provides real-time case insights and practical nuances.
Communication	**Hybrid method** – Dr. Z video-conferences Dr. X after the encounter to provide a verbal summary, plan and then confirms the plan via EMR notes.
Feedback Exchange	**Scheduled debrief** – Dr. X gives bedside feedback immediately on rounds the following day, followed by a structured review once back in the office.
Work-Life Balance	**Expectation alignment** – They discuss expecations, ensuring urgent consults are addressed efficiently.

ACGME Competency

Program directors need to have residents meet the basic competency requirements as set by the specialty boards and ACGME.

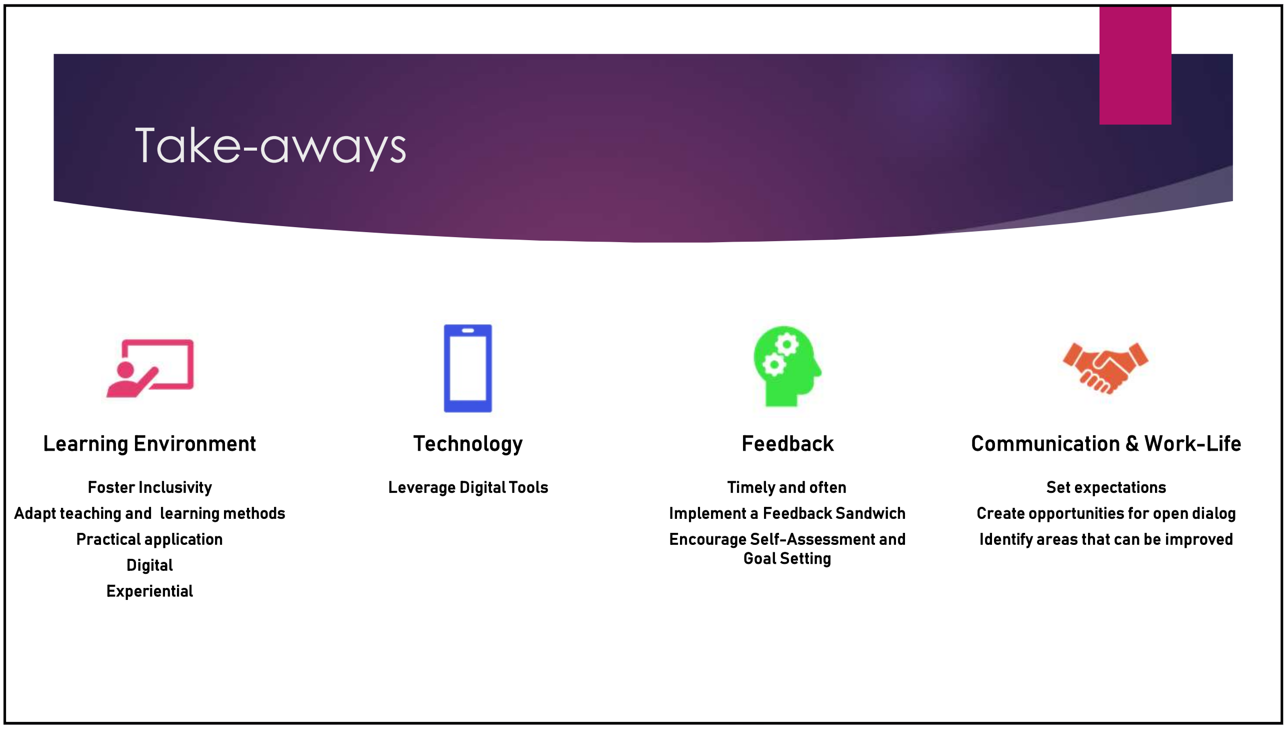
PDs need to adjust definitions of the competencies and how they are taught to maximize resident learning in the new generations

Think-Pair-Share

- Provide an example of an effective learning environment for a Gen Z learner and Gen X attending, grounded in the ACGME competencies?

1. **Medical Knowledge**
2. **Patient Care**
3. **Systems Based Practice**
4. **Professionalism**
5. **Practice Based Learning**
6. **Systems Based Practice**

Medical Knowledge	During a case conference, a Gen Z resident presents the latest research on a specific allergy treatment. A Baby Boomer attending physician shares their extensive clinical experience with the treatment.
Patient Care	A Gen X attending physician observes a Gen Z resident using a visual aid to explain a complex diagnosis to a patient. The attending, recognizing the effectiveness of this technique, adopts it into their own practice.
Systems Based Practice	A Gen Z resident leads a project to improve the efficiency of the allergy clinic's referral process, leveraging their technology skills. They collaborate with a Gen X attending who provides valuable insights into the clinic's workflow and potential challenges.
Professionalism	The team establishes a clear communication policy that outlines appropriate use of email, instant messaging, and phone calls for work-related matters, respecting both the preference for immediate communication of some and the need for boundaries of others.
Practice Based Learning	A Gen X attending provides direct feedback to a Gen Z resident after observing a patient encounter. The resident, while appreciating the feedback, also requests a more formal performance review with specific learning goals. The attending agrees and adapts their approach to meet the resident's needs.



Take-aways

Learning Environment

Foster Inclusivity
Adapt teaching and learning methods
Practical application
Digital
Experiential

Technology

Leverage Digital Tools

Feedback

Timely and often
Implement a Feedback Sandwich
Encourage Self-Assessment and Goal Setting

Communication & Work-Life

Set expectations
Create opportunities for open dialog
Identify areas that can be improved

Audience Response:

What is one strategy you will take away from today's session to better engage across generations?

Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: What is one strategy you will take away from today's session to better engage across generations?

"The beauty of the world lies in mixing managing, acceptance and appreciation of generational differences."

- Ty Howard

(Founder, principal, and chief strategist of InspiraGen Institute and the founder, owner, and editor in chief of the online magazine MOTIVATION)