TEST:

Techniques and Effective Strategies for Teaching within a dynamic medical curriculum

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Learning Objectives:

- Define social presence as relevant to a virtual environment and discuss challenges and strategies for engaging learners.
- Identify the principles of constructivism that can be utilized during teaching.
- Identify a framework, using constructivist strategies, to teach while rounding on the wards or other clinical settings.
- Discuss challenges and strategies related to teaching in the operating room environment.

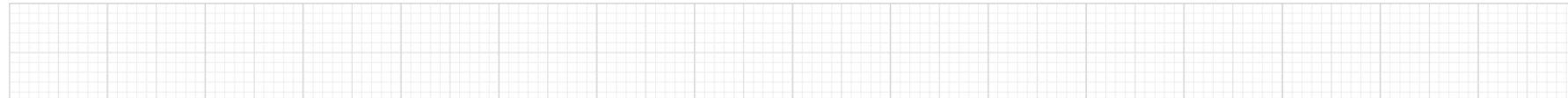# Effective Teaching Strategies for the Didactic Environment

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DECEMBER 14, 2020

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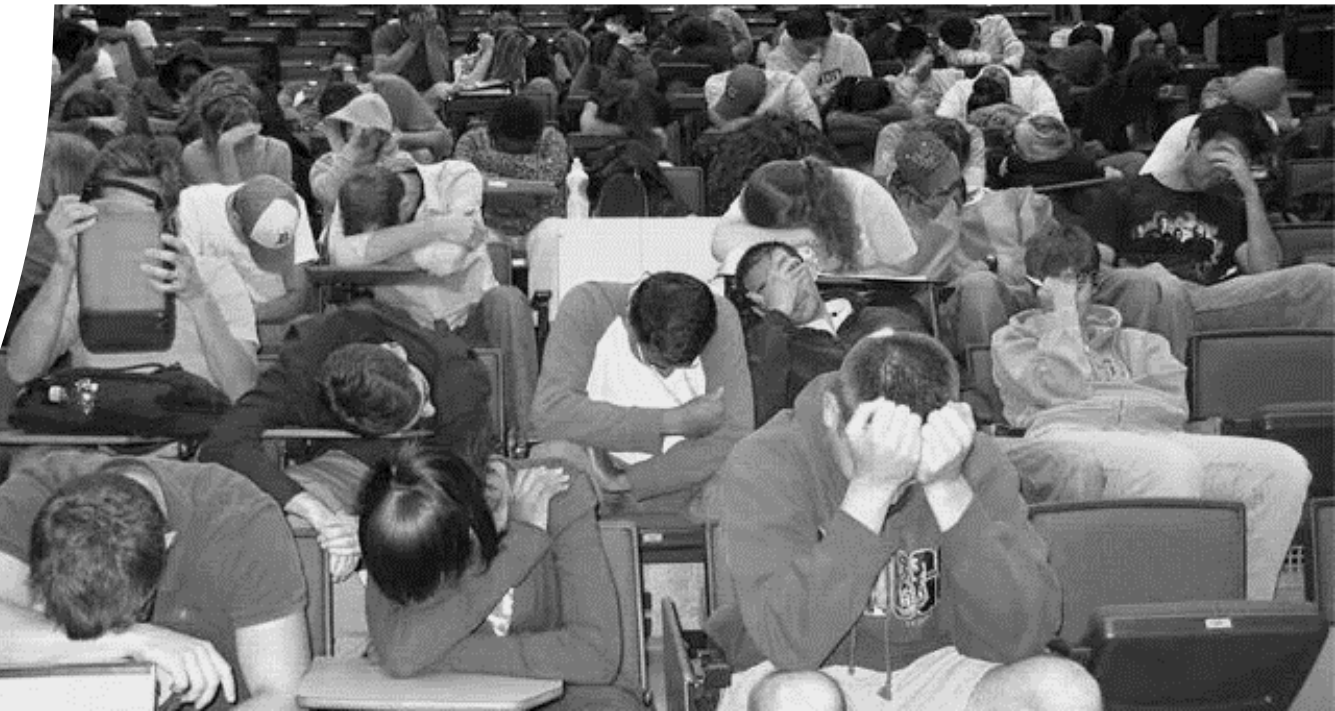# Effective Teaching Strategies for the Didactic Environment

Didactic: designed or intended to teach, intended to convey instruction and information

Effective Teaching Strategies for the Didactic Environment

- Lectures aren't just boring, they're ineffective

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Effective Teaching Strategies for the Didactic Environment

- Stop lecturing
- Engagement with purpose without reprisal
- Visualization
- Cooperative learning
- Inquiry-based instruction
- Differentiation
- Technology in the classroom, before the classroom, and after
- Professional development through historical context

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Social Presence in a Virtual Environment

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School of Medicine

Who has taken material intended for **in person instruction** and utilized it in the **virtual environment** without making modifications?

Who has experienced a **perceived lack of engagement** from students within the **virtual environment?**
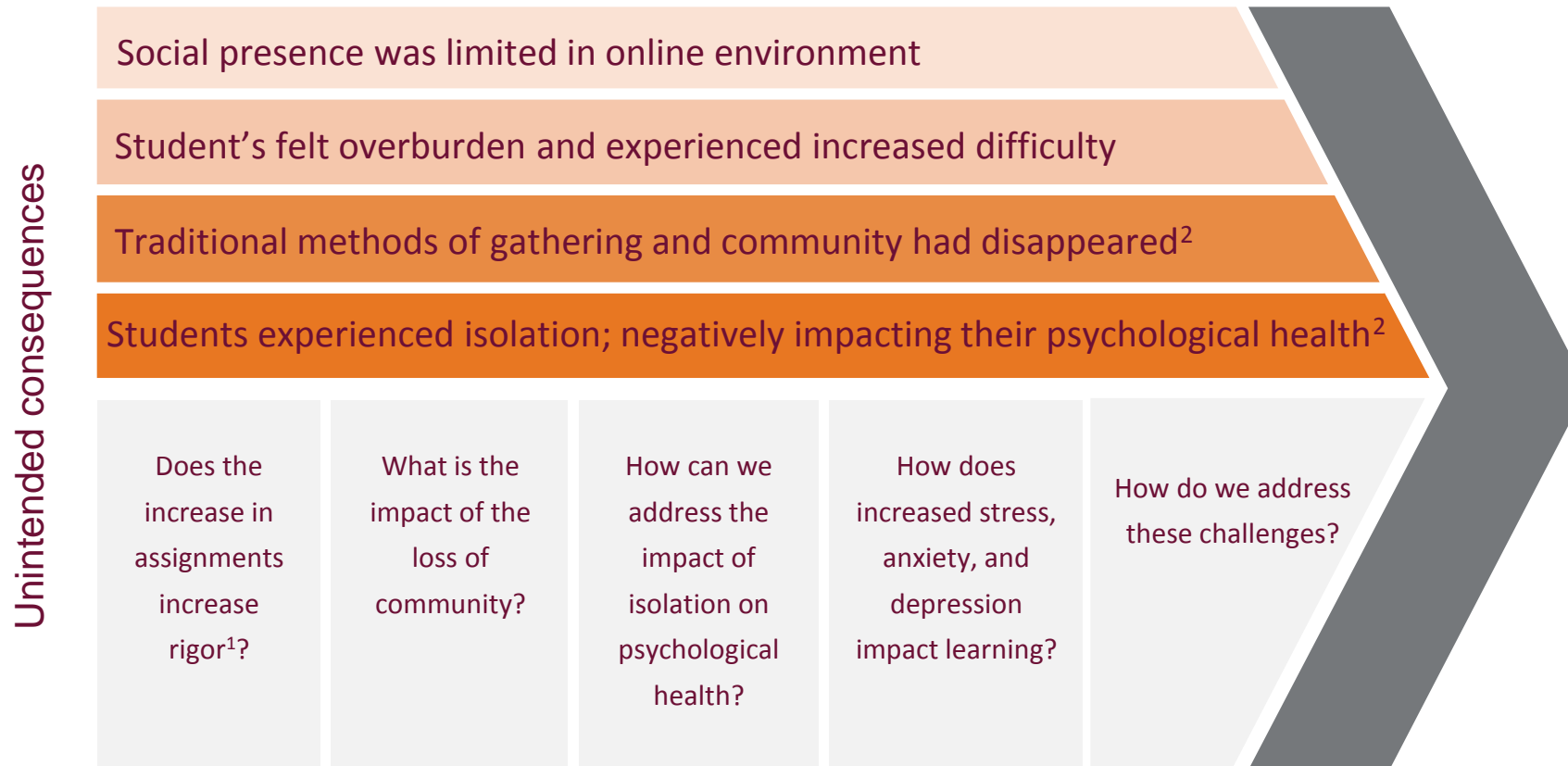
TEST CASE

RUC Pharmacotherapeutics

- 8 weeks in person
- 3 - hour **didactic lecture**
- Group-based **case discussions**
- MCQ exam every 4 weeks

- 6 weeks - Pre-recorded voice over PPT
- **2 cases per week** utilizing a minimum of 3 references
- Two **discussion board posts**
- **Required** 1-hour weekly questions and answer session
- MCQ exam every 3 weeks

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Social presence

Refection: What was the impact?

Unintended consequences

Social presence was limited in online environment

Student's felt overburden and experienced increased difficulty

Traditional methods of gathering and community had disappeared[2]

Students experienced isolation; negatively impacting their psychological health[2]

| Does the increase in assignments increase rigor[1]? | What is the impact of the loss of community? | How can we address the impact of isolation on psychological health? | How does increased stress, anxiety, and depression impact learning? | How do we address these challenges? |

1. Graham C. Essex C. Defining and Ensuring Academic Rigor in Online and On-Campus Courses: Instructor Perspectives. Annual Proceedings of Selected Research and Development [and] Practice Papers Presented at the National Convention of the Association for Educational Communications and Technology (24th, Atlanta, GA, November 8-12, 2001). Volumes 1-2; see IR 021 504.

2. Hilburg R, Patel N, Ambruso S, Biewald MA, Farouk SS. Medical Education During the Coronavirus Disease-2019 Pandemic: Learning From a Distance [published online ahead of print, 2020 Jun 23]. *Adv Chronic Kidney Dis*. 2020;doi:10.1053/j.ackd.2020.05.017

Social presence

Five Facets of social presence:

WHAT IS SOCIAL PRESENCE?

The **level of connectedness** among instructors and students that determines how motivated participants are to take an active role in their own and their peer's learning within the online environment.[3,4]

Social respect

Social identity

Intimacy

Social sharing

Open mind
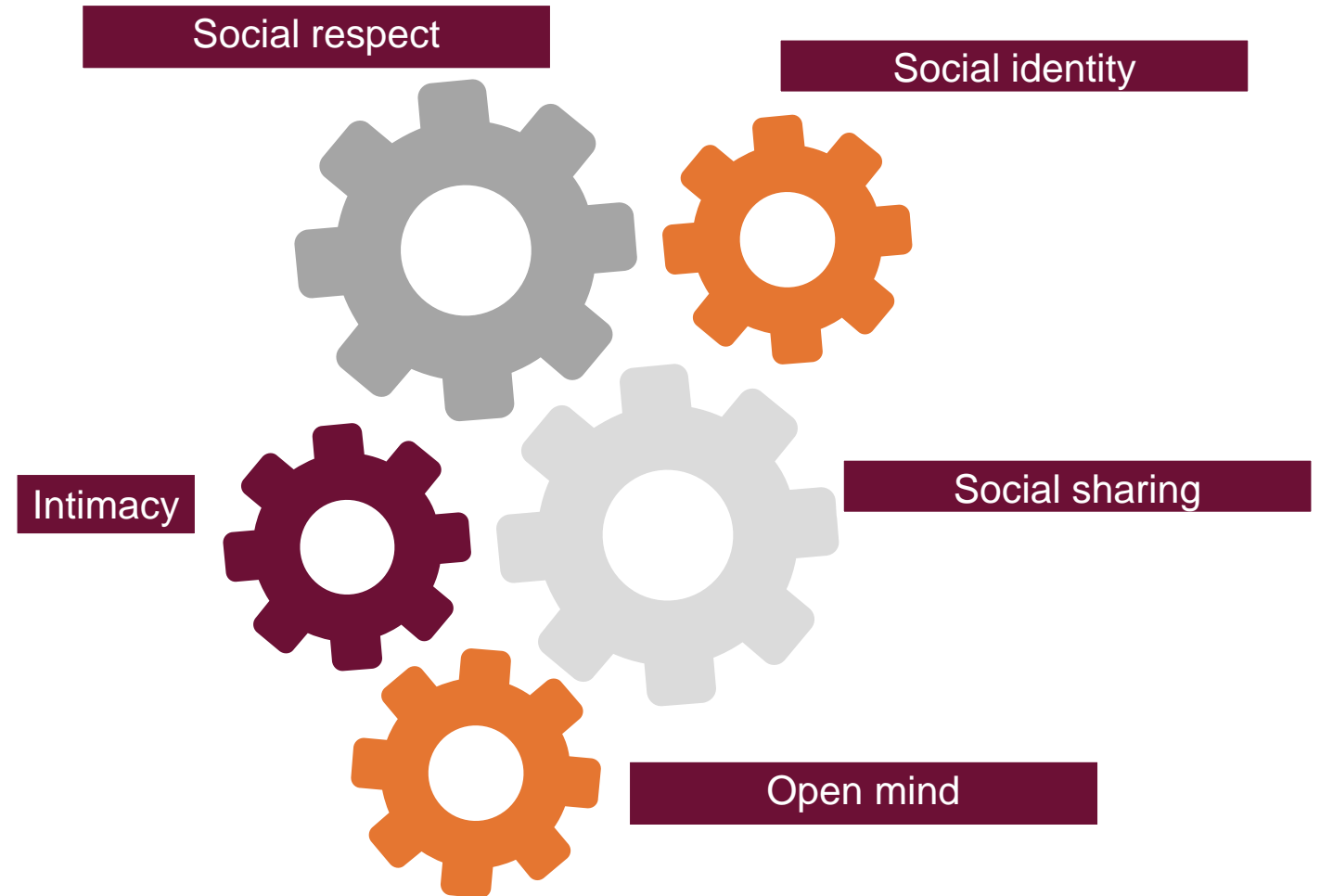
3. Sung E, Mayer, R. Five facets of social presence in online distance education. *Comput Hum Behav* 2012. Volume 27, Issue 5. Pages 1738-1747 https://doi.org/10.1016/j.chb.2012.04.014.
4. Whiteside A. Dikkers A. 2014. *The Power of Social Presence for Learning*. [online] Available at: https://er.educause.edu/articles/2014/5/the-power-of-social-presence-for-learning [Accessed 1 December 2020].

Establishing social connections is a **basic human need** and is necessary in the online realm.

- Maslow's before Blooms

High social presence positively impacts:

- Online learning and interaction
- Learner's achievement
- Satisfaction, affirmation, support, and a sense of community

Lack of social presence attributes to:

- Negative attitude towards teacher's effectiveness
- Decreased learner achievement

Social Presence

Instructor accessibility	Create social connections to build community	Utilize available tools for connectedness	Leverage student prior experience on assignments	Allow for the opportunity to express opinions	Consistent communication

Online office hours	Email and phone	Private spaces	Public discussion forum	Google	kahoot!	Increases engagement with ownership	Learning environment	Timely feedback	Create a safe space for respectful disagreement	Weekly summary	Weekly previews	Timely grading

Adjustments to Summer RUC Pharmacotherapeutics course

Content was frontloaded	Weekly voice over PowerPoints	Increased faculty interaction	Student autonomy to choose
• Delivery was first 6 weeks of summer term	• Provides independent learning	• Once weekly • Q and A sessions • Optional	• Weekly cases • Midpoint and Final exams

SAME SAME

BUT DIFFERENT

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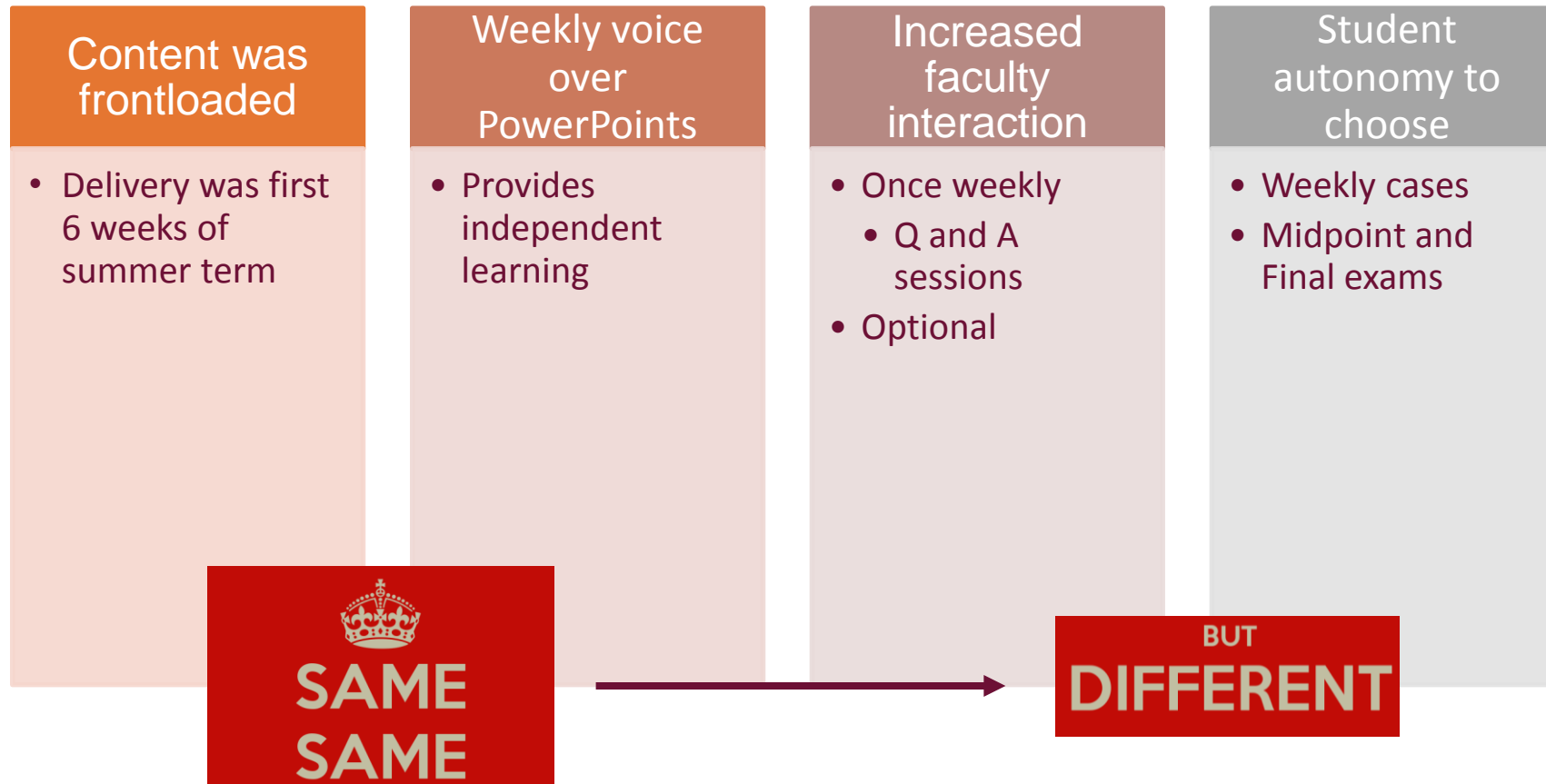
SOCIAL PRESENCE

Small changes can have big impacts

Embrace the change

Address the differences and be transparent
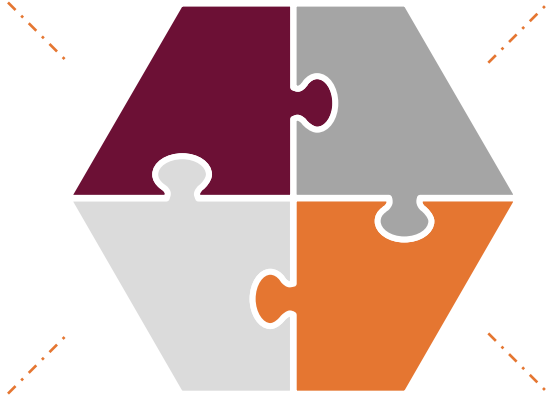
Empower the learner to make choices

Work towards an environment of social respect and collaboration

Constructivism applied to Medical Education

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DECEMBER 14, 2020

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"The most important factor influencing learning is what the learner already knows.
- Ausubel

Constructivism Defined (loosely)

- Knowledge is not acquired as a blank slate but is built upon frameworks already established.
- *Schemas*
- Assimilation and Accommodation
- The teacher uses multiple ways to build or facilitate understanding

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Constructivist Framework Applied

- Ask Questions.
- To determine the *schema* or framework that the learner already has created.

Constructivist Framework Applied

- Ask why and how questions to help the learner solidify the framework already created.
- Ask "what if" questions to help build (assimilate) new frameworks.
- **This does not take the place of reading to obtain baseline knowledge. You have to know something to start building anything.

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Teaching within the Operating Room Environment Challenges and Strategies

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DECEMBER 14, 2020

Background

- Laparoscopic/Robotic General and Bariatric surgeon
- Resident education in complex technical surgery since 2002
  Laparoscopic suturing, stapling, GI anastomoses, revisional surgery
  Elective and emergent settings
- Surgery Clerkship Director 2004-2019, VTC from 2010
  Student Simulation Course 2010-present
- Co-Director of Surgical Quality 2019-present

OR Environment Features

- Task focused
- Team based environment—multiple interdependent roles
- Requires cohesive teamwork
- Relies on good communication, understanding of tasks at hand, adequate preparation and anticipation
- Rich environment for education

Model and Discuss Ideal Behavior

- Team interactions
- Communication
- Leadership
- Process compliance
- Room awareness
- Crisis management
  - Maintaining composure
  - Optimizing resources
  - Recruiting help
- Trainee education

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Operative Patient Care

- Significant potential danger—prolonged careful concentration
- Potential rapidly changing conditions—quick reactions to adapt

Obligation to Patient
vs
Obligation to Trainee

- Reconciling the ethical challenge via appropriate supervision

- Best possible patient care

- Graduated responsibility towards independent practice

- Convey technical skills and intraoperative judgment

Teaching Technical Skills

- Remember new task is unnatural for novice
- Partial task learning for complex tasks
- Improvement occurs over weeks not hours
- Patience—recognize trainee and own limitations
- Concentration fatigue--Take breaks

Teaching Technical Skills

- Everyone starts small—involve students and interns early

- Escalate difficulty when appropriate

- Immediate _actionable_ feedback
  - Nonjudgmental when possible

- Frequent demonstration, vary explanations

- Tone of encouragement—learning environment

Teaching Judgement—Tough Choices

- Beyond anatomy and pathophysiology
- Share the bad experiences that have taught good judgment
- Think aloud, express concerns
- Discuss choices
- Encourage thinking ahead
- Discuss exit strategies
- Discuss how to fail safely when success is less likely

"C'mon, c'mon — it's either one or the other."
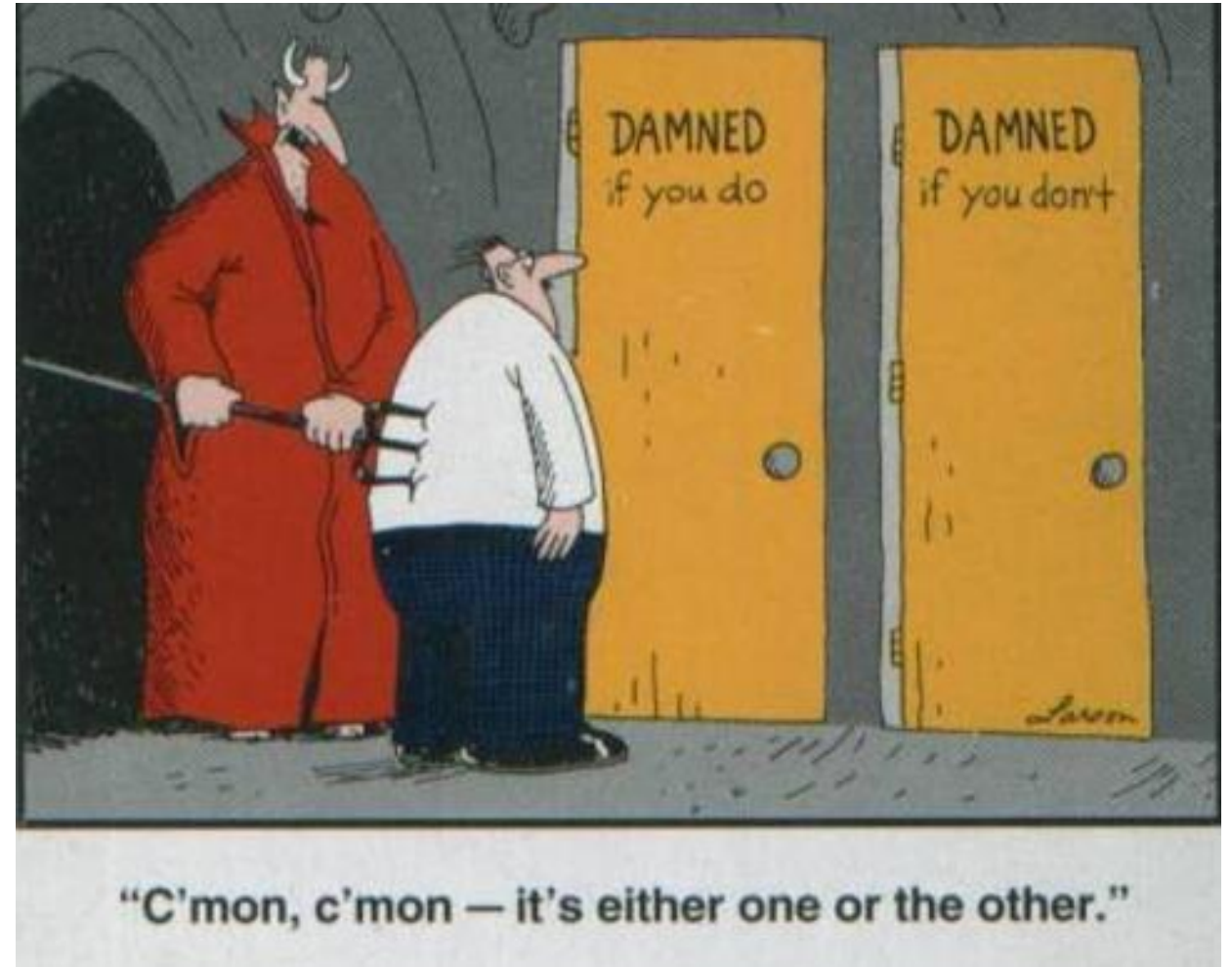
Summary

- Utilize features of OR environment for education

- Teach through example and discussion

- Acknowledge the challenges of teaching in OR

- Balance good patient care with trainee education

- Re technical skills—start small/early, give feedback, and be patient

- Discuss intraoperative choices and decisions to teach judgement