Medical Education in Critical Care Medicine: The Art and the Science

Adam Peets
I have no actual or potential disclosures related to this presentation
Thank You’s
How can I challenge myself and my colleagues to optimize the educational experience of our trainees?
Times are changing

• Type of learner

• How they learn

• External factors
Type of learner
How They Choose to Learn
How They Choose to Learn

Wikipedia

English
The Free Encyclopedia
4,000,000+ articles

Español
La enciclopedia libre
3,000,000+ articles

Русский
Свободная энциклопедия
875,000+ articles

Italiano
L’enciclopedia libera
935,000+ voce

Português
A enciclopédia livre
742,000+ artigos

日本語
フリー百科事典
815,000+ 紙

Deutsch
Die freie Enzyklopädie
1,430,000+ Artikel

Français
L’encyclopédie libre
1,270,000+ articles

Polski
Wolna encyklopedia
900,000+ wierszy

中文
自由的百科全书
500,000+ 条目
# Generation Gap

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Learning Opportunities

• Number of trainees

• Work hour restrictions

• Patient safety movement
Learning Opportunities

Peets AD, Stelfox HT. Medical Education. In press.
Learning Opportunities

Peets AD, Stelfox HT. Medical Education. In press.
Other Factors

• Work-life balance

• Job market

• Debt load

• Competency-based education movement
Challenges

• Deliberately Teach

• Teach Deliberately

• Be who you want them to be
Deliberately Teach
Hippocrates

“…to teach them this art - if they desire to learn it - without fee and covenant; to give a share of precepts and oral instruction and all the other learning to my sons and to the sons of him who has instructed me and to pupils who have signed the covenant and have taken an oath according to the medical law…”

Deliberately Teach

• Commit to it

• Scheduled

• Unscheduled

• Often the first thing to go
Deliberately Teach
Deliberately Teach

Teaching

Patients
Admin
Research
Friends
Family
Self
Deliberately Teach

Teaching

Efficiency and Effectiveness of Teaching

Patients

Admin

Research

Friends

Family

Self
Challenges

• Deliberately Teach

• Teach Deliberately

• Be who you want them to be
Teach Deliberately
Teach Deliberately

Be effective

Be efficient
Be Effective

• How much information will you retain from this session?
  A. Nothing
  B. 1-10%
  C. 20-30%
  D. 40-50%
  E. Everything!
Be Effective

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Be Effective

1. Teaching modality
2. Relevance
3. Cognitive congruence
4. Learning climate
5. Responsibility for learning
6. Enthusiasm
Be Effective

1. Choose the right **modality**

Learning Process
Be Effective

2. Ensure **relevance**
Be Effective

3. Cognitive congruence

“... the ability to express oneself in the language of the students, using concepts they use and explaining things in ways easily grasped by students.”

Be Effective

![Diagram showing the stages of skill development: Unconsciously incompetent, Consciously incompetent, Unconsciously competent, Consciously competent.](Diagram)
Be Effective

![Diagram showing the relationship between awareness and practice in terms of competence and incompetency. The diagram is divided into four quadrants: Unconsciously incompetent, Consciously incompetent, Unconsciously competent, and Consciously competent. The red circle highlights the Unconsciously competent quadrant.](Image)
Be Effective

4. Optimize the **learning climate**
Be Effective

5. Share the responsibility of learning

“Be a catalyst, not an instructor.”

Knowles MS. The Modern Practice of Adult Education. 1970
Be Effective

5. Share the responsibility of learning
Be Effective

6. Demonstrate **enthusiasm**
Be Effective

1. Choose the right modality
2. Ensure relevance
3. Cognitive congruence
4. Optimize the learning climate
5. Share the responsibility of learning
6. Demonstrate enthusiasm
Teach Deliberately

Be effective

Be efficient
Be Efficient

1. Use a structure

Plan

Teach

Review
2. Diagnose your learner
Be Efficient

2. Diagnose your learner
Be Efficient

3. Appropriate cognitive load

- Information presented
- How it is presented
- How the learner processes it

Be Efficient

3. Appropriate cognitive load
Don’t be a hoser, eh?
Good things come in threes...
Good things come in threes...
Be Efficient

3. Appropriate **cognitive load**

In the next 5 seconds memorize as many of the following letters you can
Be Efficient

3. Appropriate **cognitive load**
Be Efficient

3. Appropriate **cognitive load**

- How many did you remember?
- Can we make it easier?
Be Efficient

3. Appropriate cognitive load

- Fewer letters
Be Efficient

3. Appropriate **cognitive load**

- “Chunk”
Be Efficient

3. Appropriate **cognitive load**

- “Chunk”

pcialtieicuurlriscplooseafgiixadis
Be Efficient

3. Appropriate **cognitive load**

• “Chunk”
Be Efficient

3. Appropriate **cognitive load**

- “Chunk”

Phone: 604-682-2344

SIN: 123 456 789
Be Efficient

3. Appropriate **cognitive load**

- Understand or attach meaning to
Be Efficient

3. Appropriate **cognitive load**
Be Efficient

3. Appropriate cognitive load

supercalifragilisticexpialidocious
Be Efficient

3. Appropriate cognitive load

- Right amount
- Right level
- Connect to prior knowledge
- Help attach meaning
Be Efficient

1. Use a structure

2. Diagnose your learner

3. Appropriate cognitive load
Challenges

• Deliberately Teach

• Teach Deliberately

• Be who you want them to be
Be who you want them to be
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UBC Critical Care Medicine
Bringing Excellence in Critical Care, Teaching and Research to the Bedside
Be a learner

- Maintain intellectual curiosity
- Learn from them
- Model lifelong learning
  - Consultant skills
  - Application of knowledge (rather than rote)
- Use evidence
Be human

- Humility
- Compassion
- Wellness
- Respect
But…

- Continue to set high expectations for yourself, your colleagues and your future colleagues
Be involved

• Take an interest in our future colleagues
• Be a mentor
• Empower them
Improve the situation

- Embrace change
- Innovate
- Disseminate
Improve the situation

• Could programs share?
  – Curricula
  – Evaluation forms
  – Simulation
  – Innovation
  – Resources

• Benefits for education, time/resources, potential research…
Be who you want them to be

• Be a learner
• Be human
• Set expectations
• Be involved
• Improve the situation
Challenges

• Deliberately Teach

• Teach Deliberately

• Be who you want them to be
Thank You’s