

Enhancing Critical Thinking: Problem-Based Learning in EMS Education

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Santa Rosa Junior College

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Moving away



from traditional



Bessie the Buick



TASKS

What are your initial hypotheses as to what is wrong with Bessie?

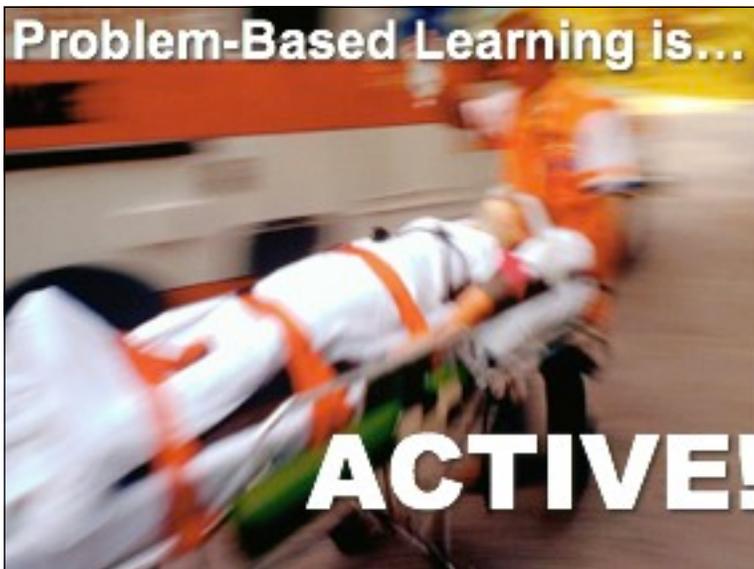
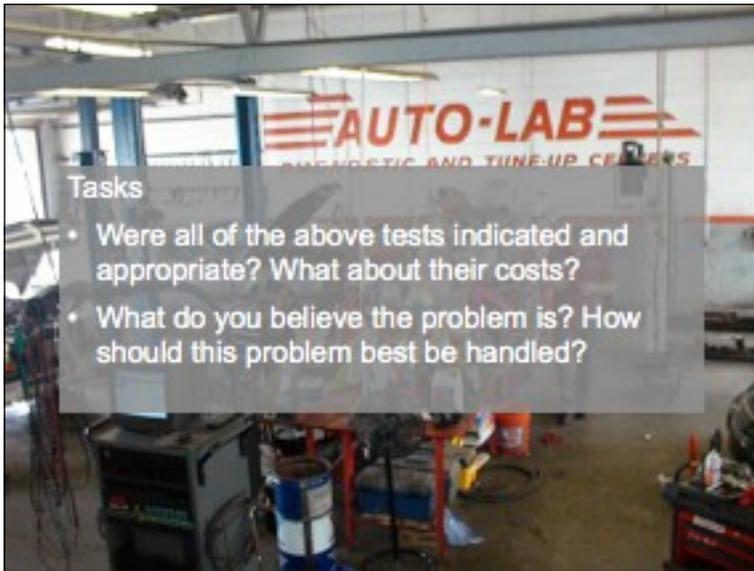
What additional information (history) would be helpful?

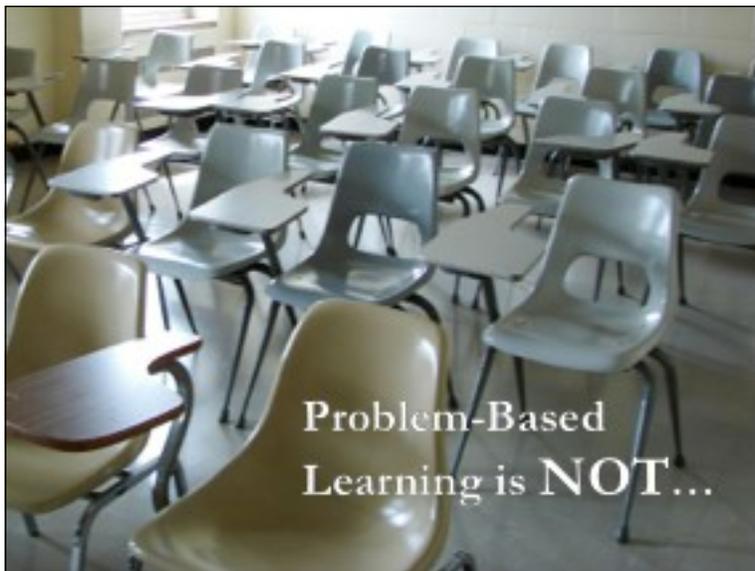
How will you obtain the additional information?



Tasks

- How does this new information help you in your problem-solving?
- Are you able to re-prioritize your original hypotheses?
- What additional information, if any, would be helpful?



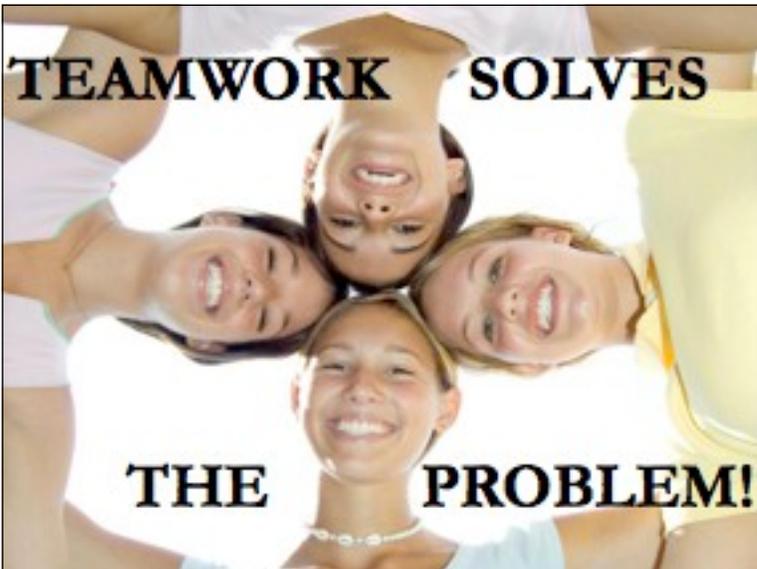
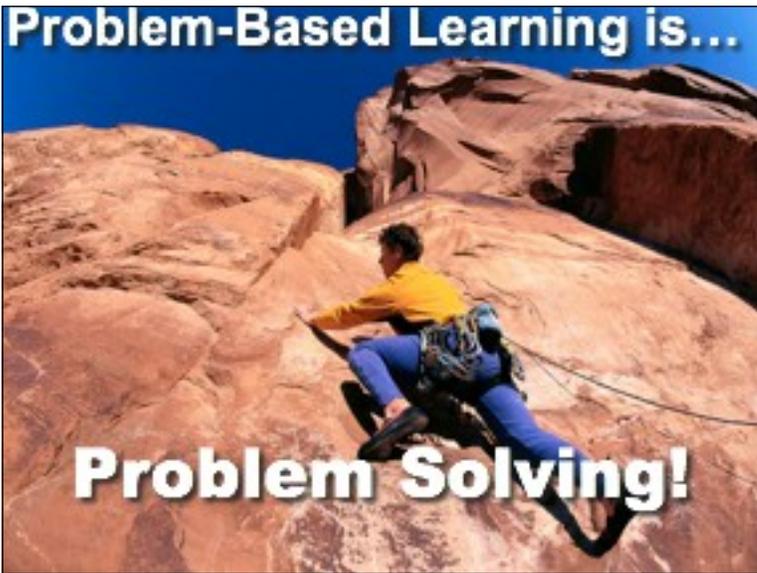


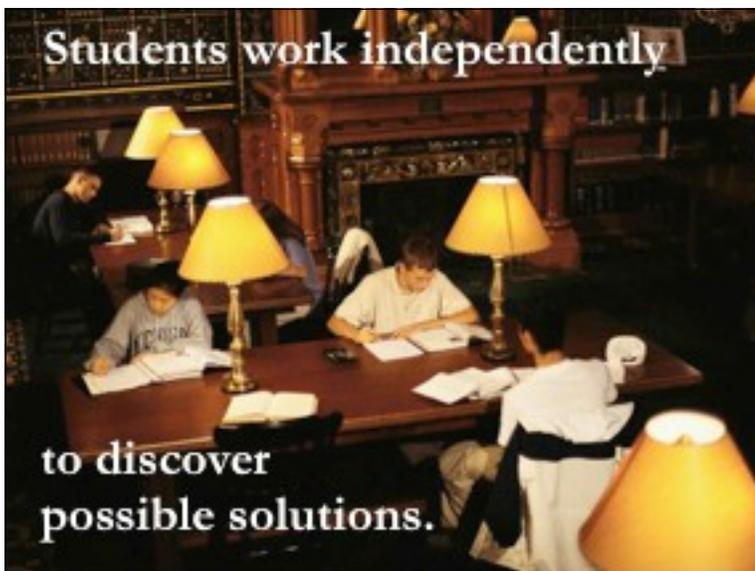
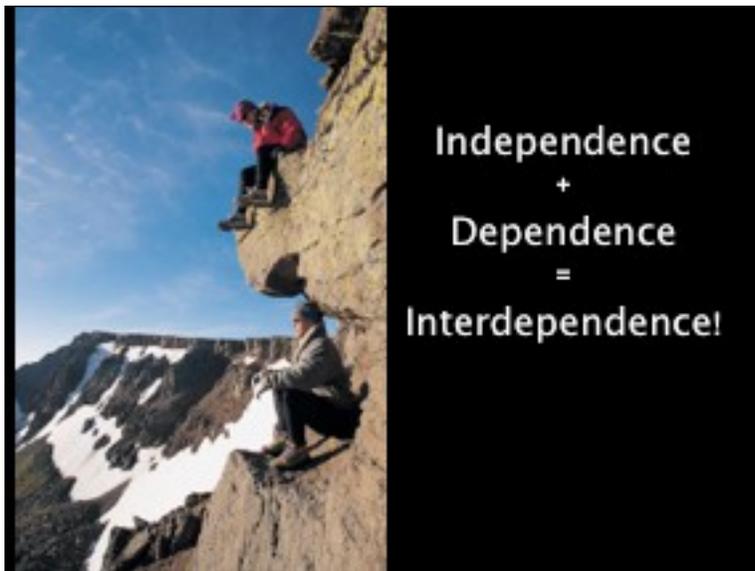
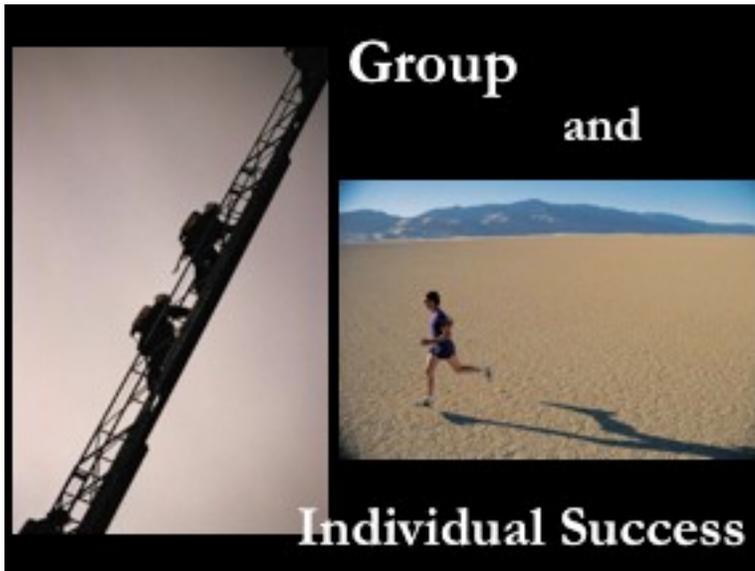
Students Remember:



- 10% ... of what is read**
- 20% ... of what is heard**
- 30% ... of what is seen**
- 50% ... of what is heard & seen**
- 70% ... of what is said**
- 90% ... of what is said & done**

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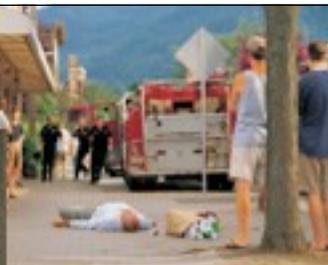
ACTIVE
Problem Solving
replaces
Rote Memory



Ill constructed
problems mimic
real life...

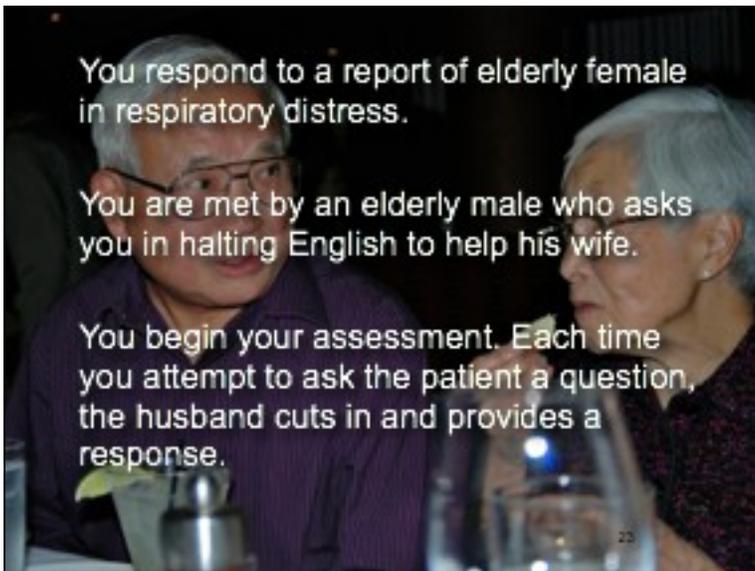


EMS requires problem
solving...



each and
every day.





Questions

- Why might the husband behave this way?
- How might you handle this situation?
- What might be implications of your actions?
- (What resources could your students access?)

Your initial assessment of the patient reveals an 87 year-old female who appears awake, in moderate respiratory distress, with faint, unequal radial pulses and poor skin signs.

- What are possible underlying causes of her condition?
- What therapies will you provide during the next 90 seconds?
- What questions will you ask *first*?
- What physical findings will you obtain first?

VS: BP= 86/56; P= 128; RR= 28

Skin: Mottled, dependent pooling, dry

ECG: Sinus Tach

SpO₂: 90% with oxygen

EtCO₂: 16 mm Hg

LS: Diminished, with rhonchi, wheezes and crackles throughout

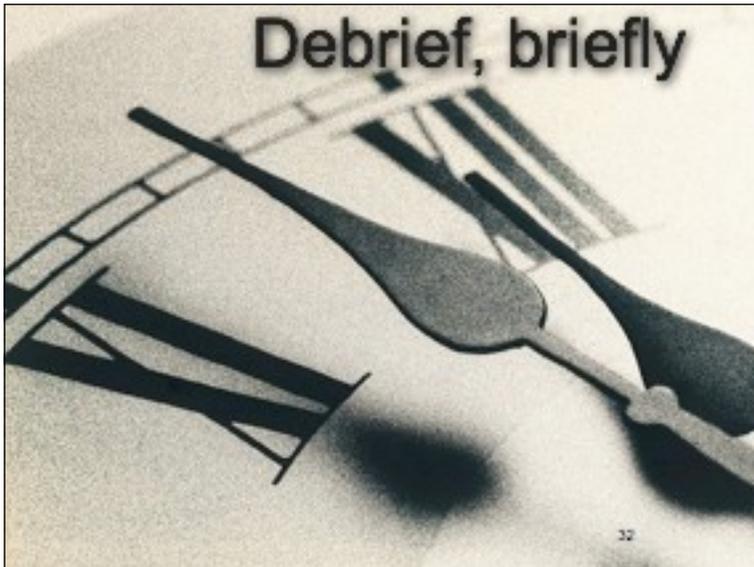
- Refine your list of underlying causes.
- What other physical findings would be critical to know?
- What therapies would you institute at this point?
- What do you want to know about the patient's history, in order of importance?

- Nonproductive cough
- 99° temperature (oral)
- Pills:
- 5 day history
- Decreasing I/O in past 36 hours
- SOB in last 8 hours
- (-) pedal edema
- (-) JVD



- Has this information changed your suspicions? Why or why not?
- What treatment would you provide?
- What are the likely causes to the patient's presentation?

Debrief, briefly

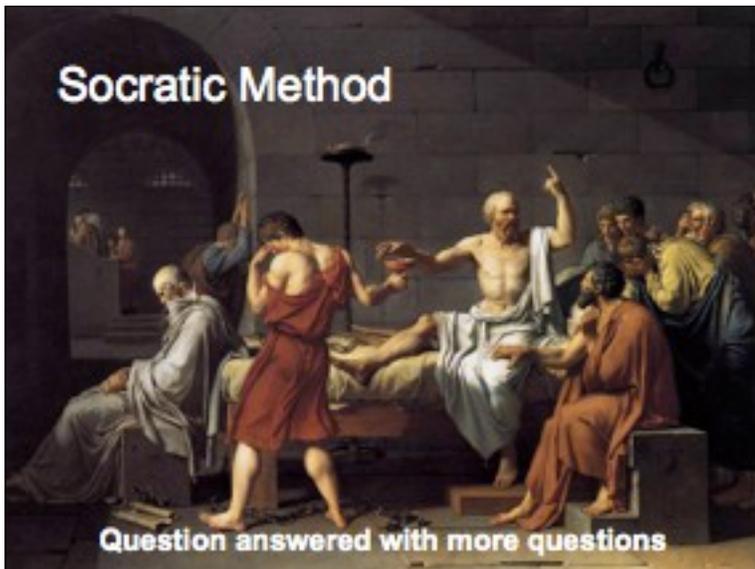


Facilitation in PBL



Facilitation of PBL:

*Providing support
without giving answers*



Effective Questioning

- Ask, don't tell.
- Stimulate..... probe...clarify.
- One at a time, please.
- Silence is golden.
- Adapt and adjust.
- *Don't lead.*



When Asked.....

- Can the student answer his/her own question? Can anyone else in the group answer?
- Does the student want *you* to answer or does s/he want to try to find the answer first?
- Suggest it as something the group may want to explore.

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Sample Questions

- "Can you sketch that for us?"
- "What is the evidence for that?"
- "Are you sure?"
- "What exactly is your question?"
- "Where can you go to find that information?"

Encourage Behavior

- Inquire
- Creative
- Criticize
- Explore

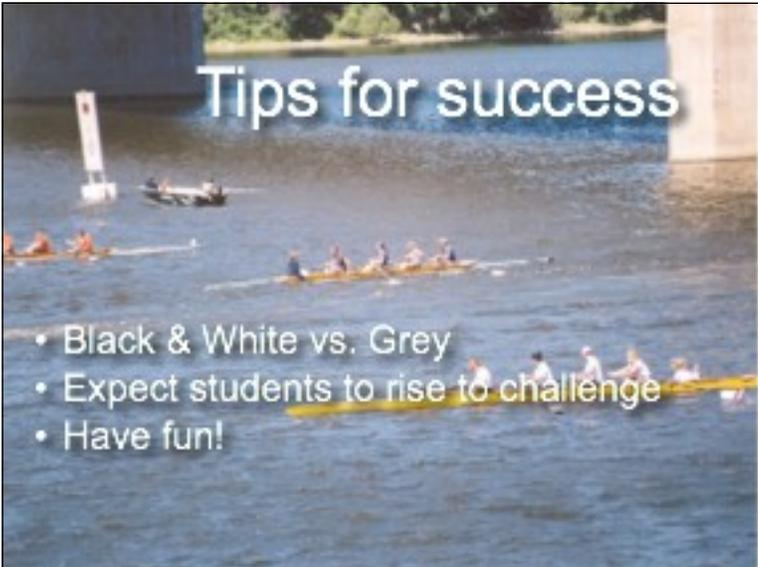


Encourage communication

- Allow time for reflection
- Lots of feedback
- Lots of positive reinforcement
- Inquire deeply

PBL Pitfalls

- Too much information
- Too much direction
- Limiting focus of study
- Stand alone



Tips for success

- Black & White vs. Grey
- Expect students to rise to challenge
- Have fun!

**What does education often do?
It makes a straight-cut ditch of
a free meandering brook.**

- Henry David Thoreau

Thanks so much!

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