

5-10-2016

Step Up to the Plate! Using Multimedia Content and Game Winning Strategies for Implementation

Betsy J. Becker

University of Nebraska Medical Center, betsyj.becker@unmc.edu

Peggy Moore

University of Nebraska Medical Center, peggy.moore@unmc.edu

Follow this and additional works at: https://digitalcommons.unmc.edu/cahp_pt_pres



Part of the [Educational Methods Commons](#)

Recommended Citation

Becker, Betsy J. and Moore, Peggy, "Step Up to the Plate! Using Multimedia Content and Game Winning Strategies for Implementation" (2016). *Posters and Presentations: Physical Therapy*. 2.

https://digitalcommons.unmc.edu/cahp_pt_pres/2

This Conference Proceeding is brought to you for free and open access by the Physical Therapy at DigitalCommons@UNMC. It has been accepted for inclusion in Posters and Presentations: Physical Therapy by an authorized administrator of DigitalCommons@UNMC. For more information, please contact digitalcommons@unmc.edu.

Step Up to the Plate!

Using Multimedia Content & Game
Winning Strategies for Implementation



Betsy J. Becker, PT, DPT, CLT-LANA

UNMC Assistant Professor,
Physical Therapy Education
College of Allied Health Professions

BetsyJ.Becker@unmc.edu



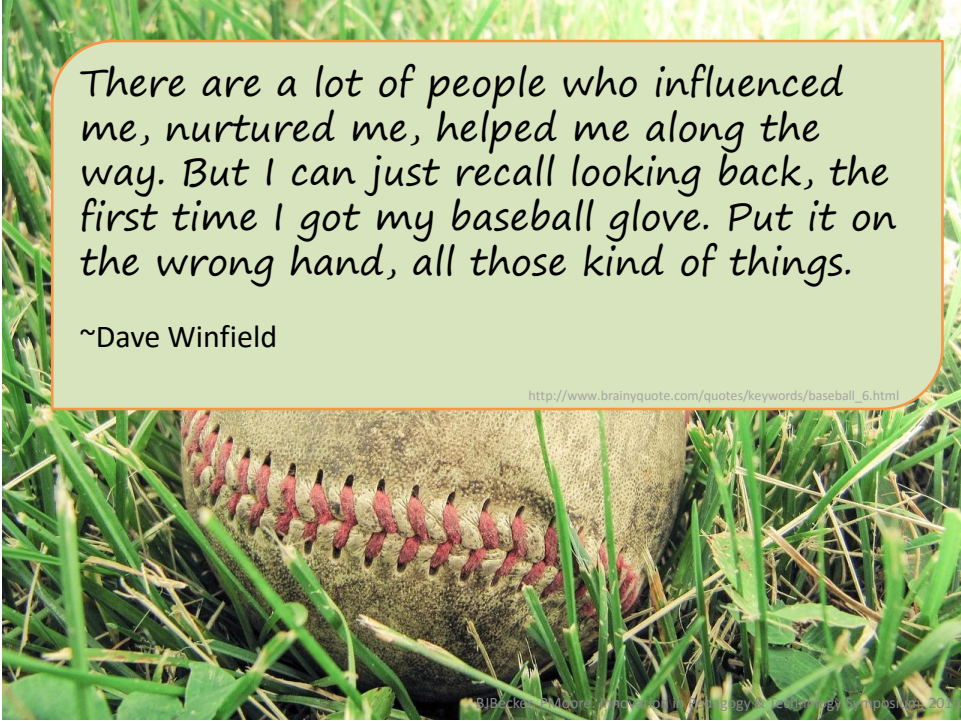
Peggy Moore, MEd

UNMC E-Learning Instructional Designer

peggy Moore@unmc.edu



The presenters have no financial disclosures that would be a potential conflict of interest with this presentation.



There are a lot of people who influenced me, nurtured me, helped me along the way. But I can just recall looking back, the first time I got my baseball glove. Put it on the wrong hand, all those kind of things.

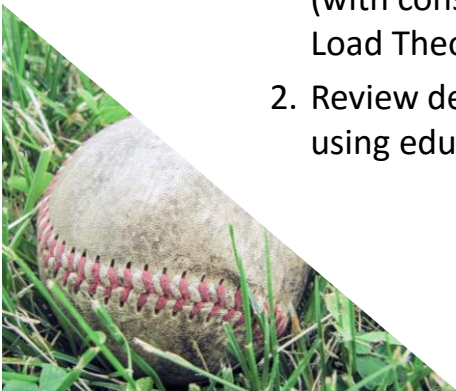
~Dave Winfield

http://www.brainyquote.com/quotes/keywords/baseball_6.html

BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

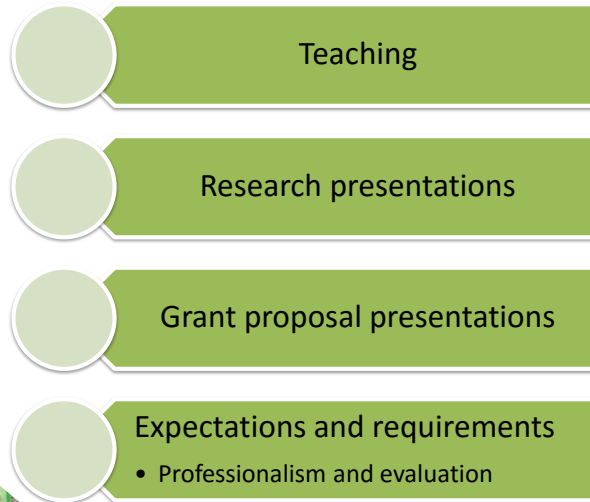
Objectives

1. Apply Mayer's Multimedia Principles (with consideration of the Cognitive Load Theory) to presentation content.
2. Review decision making strategies for using educational technology.



BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

Why?



BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

How Does Multimedia Learning Work?

2 Channels

Limited Capacity

Active Processing

Verbal

Visual

Small Bits

Engage



Mayer, R. E. (Ed.). (2014). *The Cambridge handbook of multimedia learning (2nd ed)*. New York: Cambridge University Press.

BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

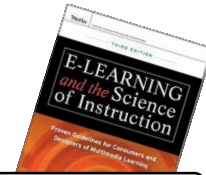
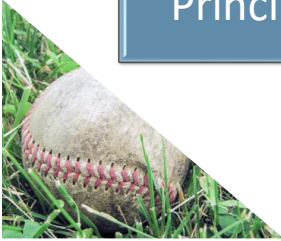
4 Mayer's Multimedia Principles To Consider

Coherence
Principle

Segmenting
Principle

Redundancy
Principle

Spatial
Contiguity



Find all of Mayer's
principles in this book

BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

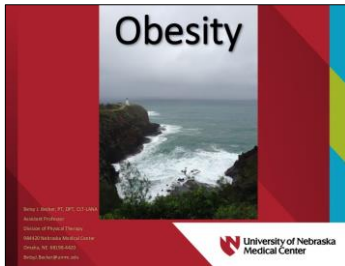
Before and After
*What happened in the
off-season?*



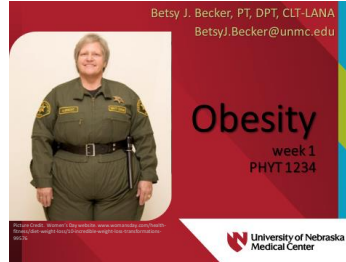
Coherence Principle

Omit extraneous words, visuals or elements add purely for interest. Less is more.

STRIKE OUT



HOME RUN

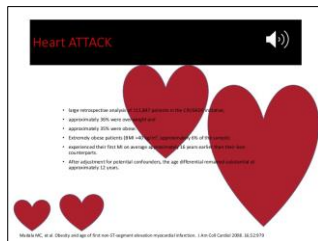


BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

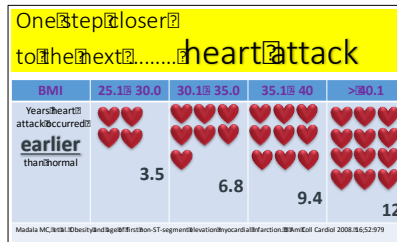
Redundancy Principle

Explain graphic with words OR text, not both

STRIKE OUT



HOME RUN



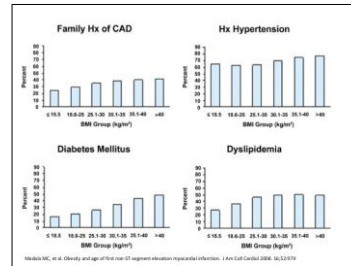
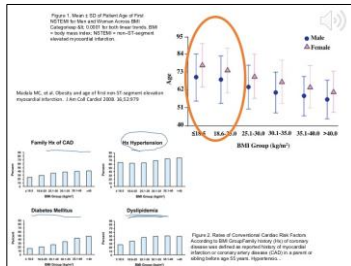
BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

Segmenting Principle

Break complex lessons into bite-size segments

**STRIKE
OUT**

**HOME
RUN**



BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

Screencast video of downloading PowerPoint Slides from manuscript

**CLICK
HERE**

Obesity and age of first non-ST-segment elevation myocardial infarction.
Madala MC, Franklin BA, Chen AY, German AD, Roe MT, Peterson ED, Ohman EM, Smith SC Jr, Gibler WB, McCullough PA, CRUSADE Investigators.

Abstract
OBJECTIVES: Because excess adiposity is one of the most important determinants of adipokines and inflammatory factors associated with coronary plaque rupture, we hypothesized that [obesity] was associated with myocardial infarction at earlier ages.
BACKGROUND: The developing [obesity] pandemic of the past 50 years has gained considerable attention as a major public health threat.
METHODS: The CRUSADE (Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcome with Early Implementation of the American College of Cardiology/American Heart Association Guidelines) registry was a voluntary observational data collection and quality improvement initiative that began in November 2001, with retrospective data collection from January 2001 to January 2007. The CRUSADE initiative included high-risk patients with unstable angina and [non-ST-segment elevation] myocardial infarction (NSTEMI). We retrospectively examined, among 180,065 patients with acute coronary syndrome (between January 2001 and September 2006) in the CRUSADE initiative, the relationship of body mass index (BMI) with patient [age] of [NSTEMI].
RESULTS: A total of 111,847 patients with NSTEMI were included in the final analysis. There was a strong, inverse linear relationship between BMI and earlier [age] of [NSTEMI]. The mean patient ages (\pm SD) of [NSTEMI] were 74.6 \pm 14.3 years and 58.7 \pm 12.5 years for the leanest (BMI $<$ 18.5 kg/m²) and most obese (BMI $>$ 40.0 kg/m²) cohorts, respectively ($p <$ 0.0001). After adjustment for baseline demographic data, cardiac risk factors, and medications, the [age] of [NSTEMI] occurred 3.5, 5.8, 9.4, and 12.0 years earlier with ascending levels of adiposity (BMI 25.1 to 30.0, 30.1 to 35.0, 35.1 to 40.0, and $>$ 40.0 kg/m²), respectively; referent 18.6 to 25.0 kg/m²) ($p <$ 0.0001 for each estimate).
CONCLUSIONS: Excess adiposity is strongly related to [NSTEMI] occurring prematurely.

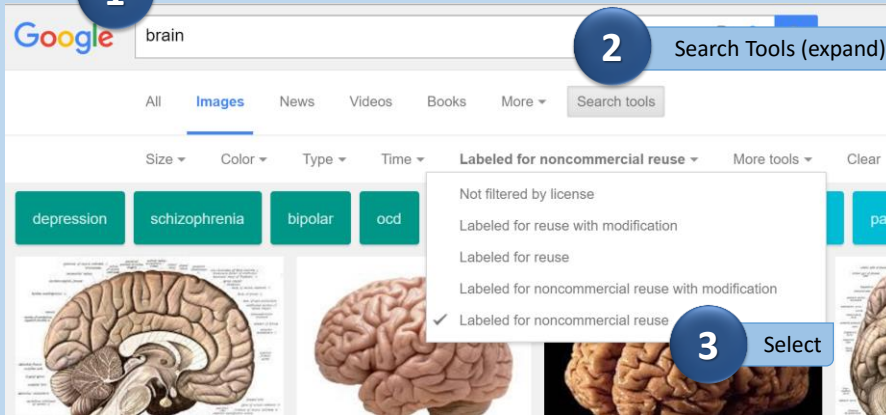
Comment in
[obesity], cardiology, and beyond. [*J Am Coll Cardiol*. 2008]

PMID: 18786477 [PubMed - indexed for MEDLINE] Free full text

BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

Fair Use Images from Google Images

1 Search for term in images category



BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

Signaling Principle

highlight important elements with cues

STRIKE OUT

HOME RUN

How to take a radial pulse.

- Turn your left hand so that your palm is face up.
- With the index and middle fingers of your right hand, draw a line from the base of your thumb to just below the crease in your wrist. Your fingers should rest just to the left of the large tendon that goes up when you bend your wrist toward you.
- Don't press too hard; it will make the pulse go away. Use gentle pressure.
- Hold it for 30 seconds and count the number of pulses in the 30 seconds. If you can't feel a pulse, wait 30 seconds and try again.
- Repeat the process for your right wrist.
- Normal resting heart rate is about 60-100 beats per minute.

HOW TO TAKE A RADIAL PULSE (CONTINUED)

- Find a watch with a second hand and place it on your left wrist or at the base of your left hand.
- After finding your pulse, count the number of beats for 30 seconds.
- Multiply by 2 to get your heart rate, or beats per minute.
- Normal resting heart rate is about 60-100 beats per minute.

TAKE RADIAL PULSE

CALCULATE Beats Per Min (bpm)

30 beats in 20 seconds

$30 \times 3 = 90 \text{ bpm}$

Count beats for 20 seconds

Normal Resting Heart Rate 60-100 bpm

BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

Redundancy Principle

Explain graphic with words OR text, not both.

STRIKE
OUT

How to determine exercise intensity from the pulse

The Karvonen Formula is a mathematical formula that helps you determine your target heart rate (HR) training zone. The formula uses maximum and resting heart rate with the desired training intensity to get a target heart rate.

Target Heart Rate = $(\text{max HR} - \text{resting HR}) \times \text{Intensity} + \text{resting HR}$

HR example: $(180 - 60 \times .6) + 60 = 122 \text{ bpm}$

HOME
RUN

Karvonen Formula
Target Heart Rate Training Zone

$$[(\text{HR}_{\text{max}} - \text{HR}_{\text{rest}}) \times \text{Intensity}] + \text{HR}_{\text{rest}}$$

| Example 1 | Example 2 |
|-----------------------------------|-----------------------------------|
| HR _{max} = 180 beats/min | HR _{max} = 180 beats/min |
| HR _{rest} = 60 beats/min | HR _{rest} = 60 beats/min |
| Intensity = 50% | Intensity = 70% |
| $= (180 - 60 \times .5) + (60)$ | $= (180 - 60 \times .7) + (60)$ |
| $= 120 \text{ bpm}$ | $= 144 \text{ bpm}$ |

BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

Signaling Principle

highlight important elements with cues

STRIKE
OUT

How to determine exercise intensity from the pulse

The Karvonen Formula is a mathematical formula that helps you determine your target heart rate (HR) training zone. The formula uses maximum and resting heart rate with the desired training intensity to get a target heart rate.

Target Heart Rate = $(\text{max HR} - \text{resting HR}) \times \text{Intensity} + \text{resting HR}$

HR example: $(180 - 60 \times .6) + 60 = 122 \text{ bpm}$

HOME
RUN

Karvonen Formula

$$[(\text{HR}_{\text{max}} - \text{HR}_{\text{rest}}) \times \text{Intensity}] + \text{HR}_{\text{rest}}$$

EXAMPLE

HR_{max} = 180 beats/min
HR_{rest} = 60 beats/min
Intensity = 50%

$$[(180 - 60) \times .50] + 60 = 120 \text{ bpm}$$

BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

How to screen capture (record) what happens on an iPad or iPhone

1

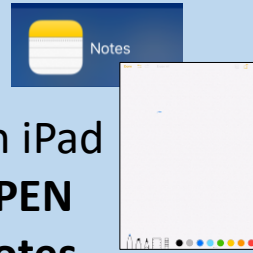
Connect

iPad to Mac with USB cord



2

on iPad
OPEN Notes
(app)



3

On Computer

OPEN QuickTime Player
Select New Movie Recording

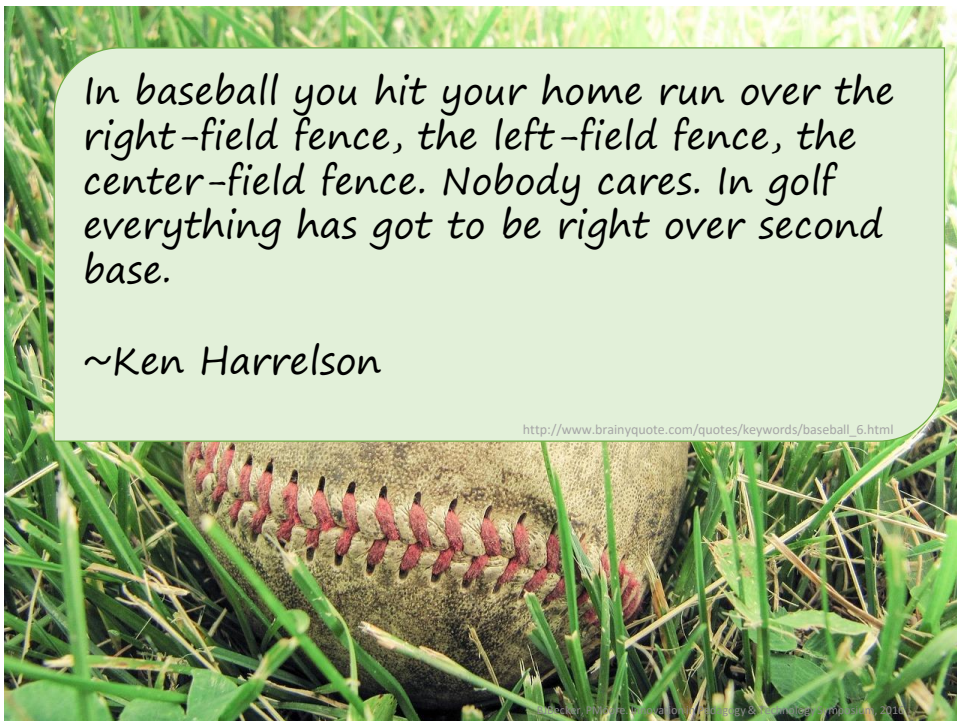


BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

In baseball you hit your home run over the right-field fence, the left-field fence, the center-field fence. Nobody cares. In golf everything has got to be right over second base.

~Ken Harrelson

http://www.brainyquote.com/quotes/keywords/baseball_6.html



BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

Summary

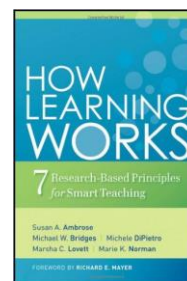
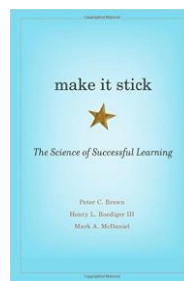
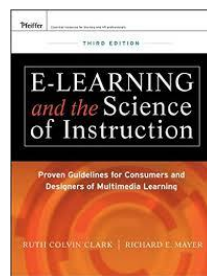
Demonstrated examples of content design (including decision making strategies) utilizing the Cognitive Load Theory to maximize deeper learning by applying Mayer's Multimedia Principles.



BJBecker, PMoore. Innovation in Pedagogy & Technology Symposium, 2016

Educational Resources

Click on a cover for a link to online bookseller.



University Resources

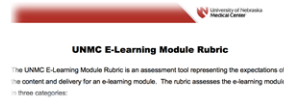
(we know there are many more – here is a start!)



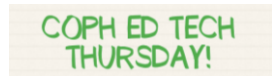
[UNMC E-Learning](#)



[Connect Ed](#)



[Rubric \(checklist\)](#)



[UNMC Coph Ed Tech Tips Thursday](#)



[UNL Office of Online & Distance Education](#)



[UNO API Faculty Portal](#)



[UNK Faculty Resources](#)

Best Practices

Cardinal Rule: Keep It Simple



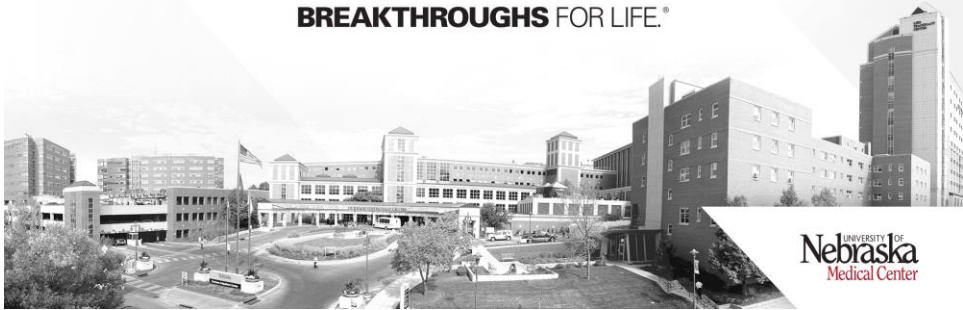
http://storage.ted.com/tedx/manuals/tedx_speaker_guide.pdf

<http://www.amstat.org/meetings/jsm/2014/effectivepresentations.cfm>



University of NebraskaSM Medical Center

BREAKTHROUGHS FOR LIFE.[®]



UNIVERSITY OF
Nebraska
Medical Center