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Comparing Critical Thinking Outcomes in First Year Occupational Therapy Problem-Based Learning Groups Using Six Thinking Hats Strategy

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Objectives

- Learners will define critical thinking skills of health sciences students

- Learners will discuss problem-based learning (PBL) as a method for development of critical thinking skills of health sciences students

- Learners will become familiar with an intervention to enhance development of critical thinking in conjunction with PBL

A **single** definition of critical thinking is NOT universally **accepted,** but there are common features (Larsson, 2017; Macpherson, 2003):
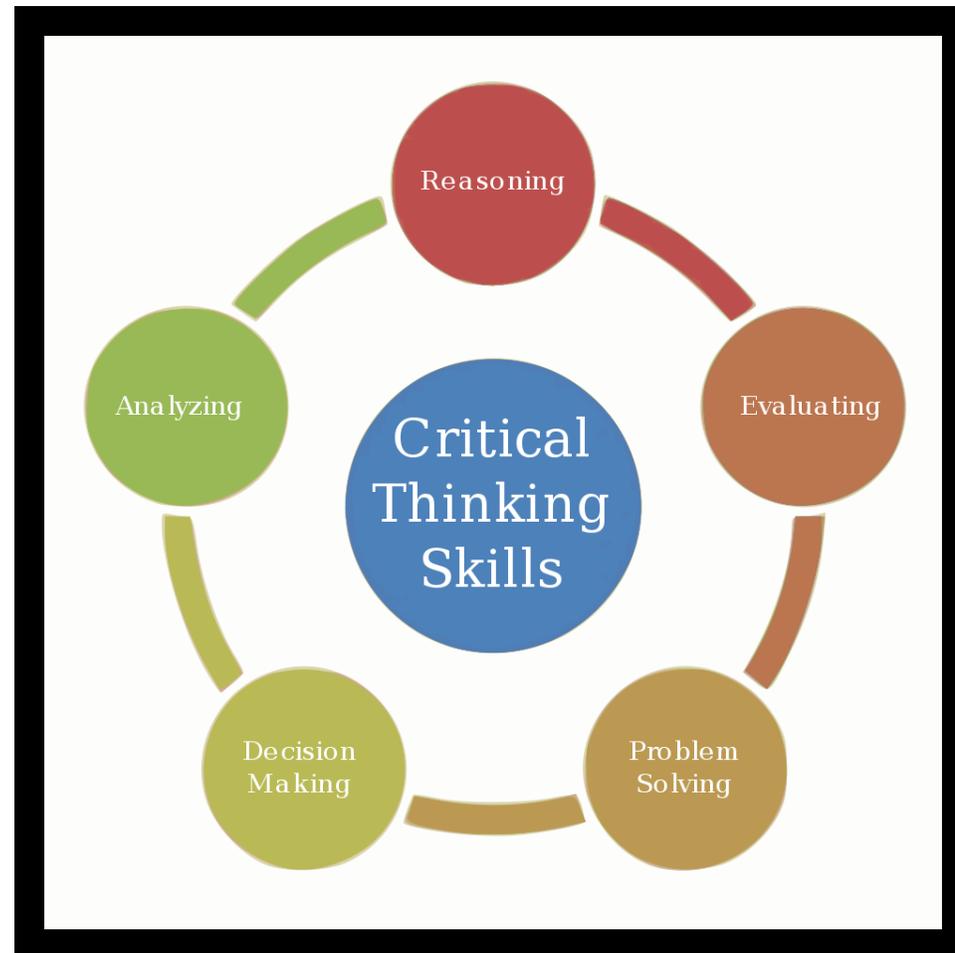
The situation: Younger graduate students are internet natives, but not necessarily adept at critically appraising information (Holiday & Li, 2004).
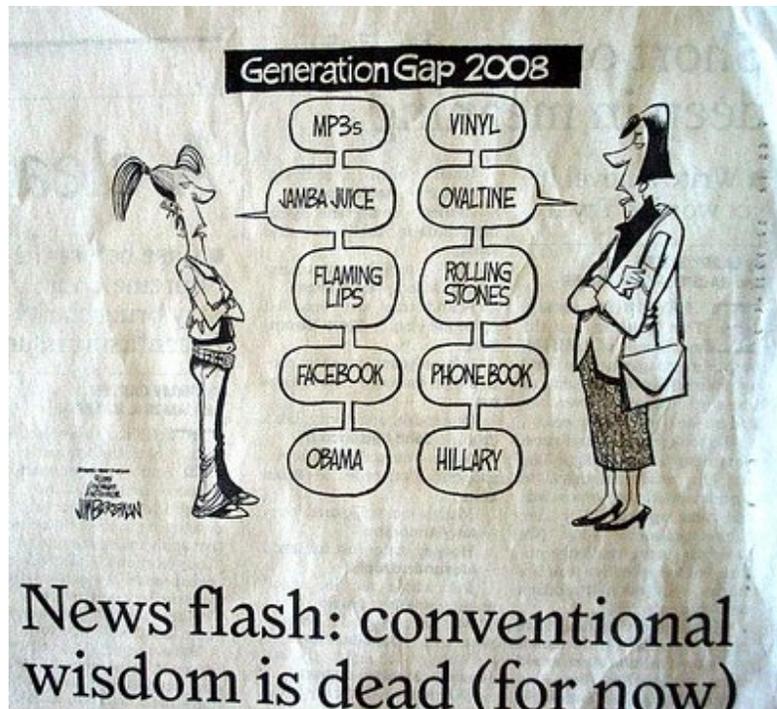
UNM-OTGP has been using PBL for over 20 years to encourage development of critical thinking skills.

Traditional Learning

Told what we need to know → Memorize it → Problem assigned to illustrate how to use it

Problem Based Learning (PBL)

Problem assigned → Identify what we need to know → Learn and apply it to solve the problem
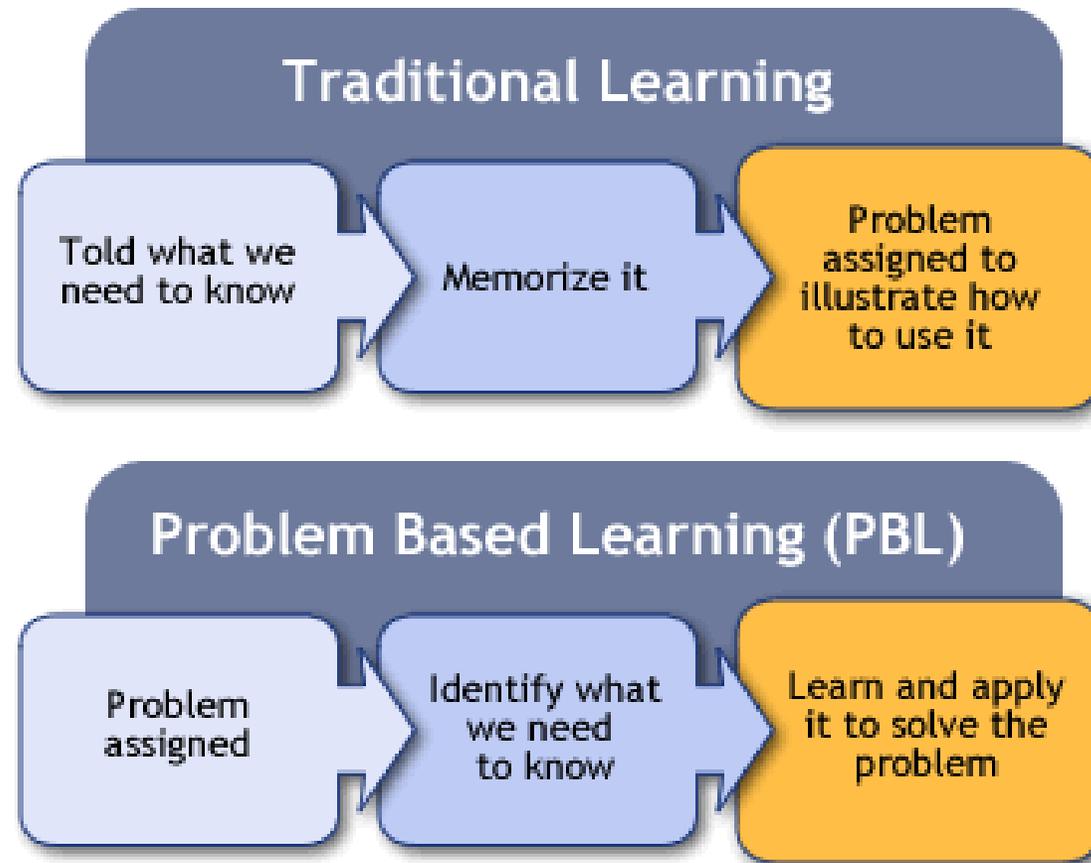
But, how do we know PBL really increases development of critical thinking, particularly our youngest learners???

The purpose of the study is to determine if explicitly teaching critical thinking skills during PBL can lead to measurable change using a health-sciences reasoning test.

Does teaching students the Six Thinking Hats model =increased critical thinking outcomes?

Students in experimental groups, students in control groups take pre-HSRT (one cohort 2018, one cohort 2019)

Exp. Groups spend 2 semesters with trained PBL facilitators modeling Six Thinking Hats
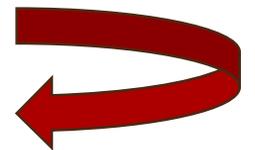
2018 cohort: tentative results: no significant difference between experimental group and control; will repeat measure

Data is prepared for analysis, checking for difference, significance

Students in experimental groups, students in control groups take post-HSRT

The Health Sciences Reasoning Test was used as the instrument to measure change.

- **(HSRT)** measures high-stakes reasoning and decision-making processes.

- Scores on this instrument have been found to predict successful professional licensure and high clinical performance ratings.

- The HSRT is designed as a multiple choice format test and can be administered in a 50 minute setting.

- Information is presented in text-based and diagrammatic formats; questions invite test takers to draw inferences, to make interpretations, to analyze information, to draw warranted inferences, to identify claims and reasons, and to evaluate the quality of arguments.

Used as the intervention, the Six Thinking Hats provide a structure for developing meta-cognition using hat colors for different kinds of thinking (deBono, 1999)

PROCESS

Blue Hat - Process
Thinking about thinking.
What thinking is needed?
Organizing the thinking.
Planning for action.

CREATIVITY

Green Hat - Creativity
Ideas, alternatives, possibilities.
Solutions to black hat problems.

FACTS

White Hat - Facts
Information and data.
Neutral and objective.
What do I know?
What do I need to find out?
How will I get the information I need?

BENEFITS

Yellow Hat - Benefits
Positives, plus points.
Why an idea is useful.
Logical reasons are given.

FEELINGS

Red Hat - Feelings
Intuition, hunches, gut instinct.
My feelings right now.
Feelings can change.
No reasons are given.

CAUTIONS

Black Hat - Cautions
Difficulties, weaknesses, dangers.
Spotting the risks.
Logical reasons are given.

Limitations of this study include sample size, extraneous variables, controlling bias, and determining cause & effect
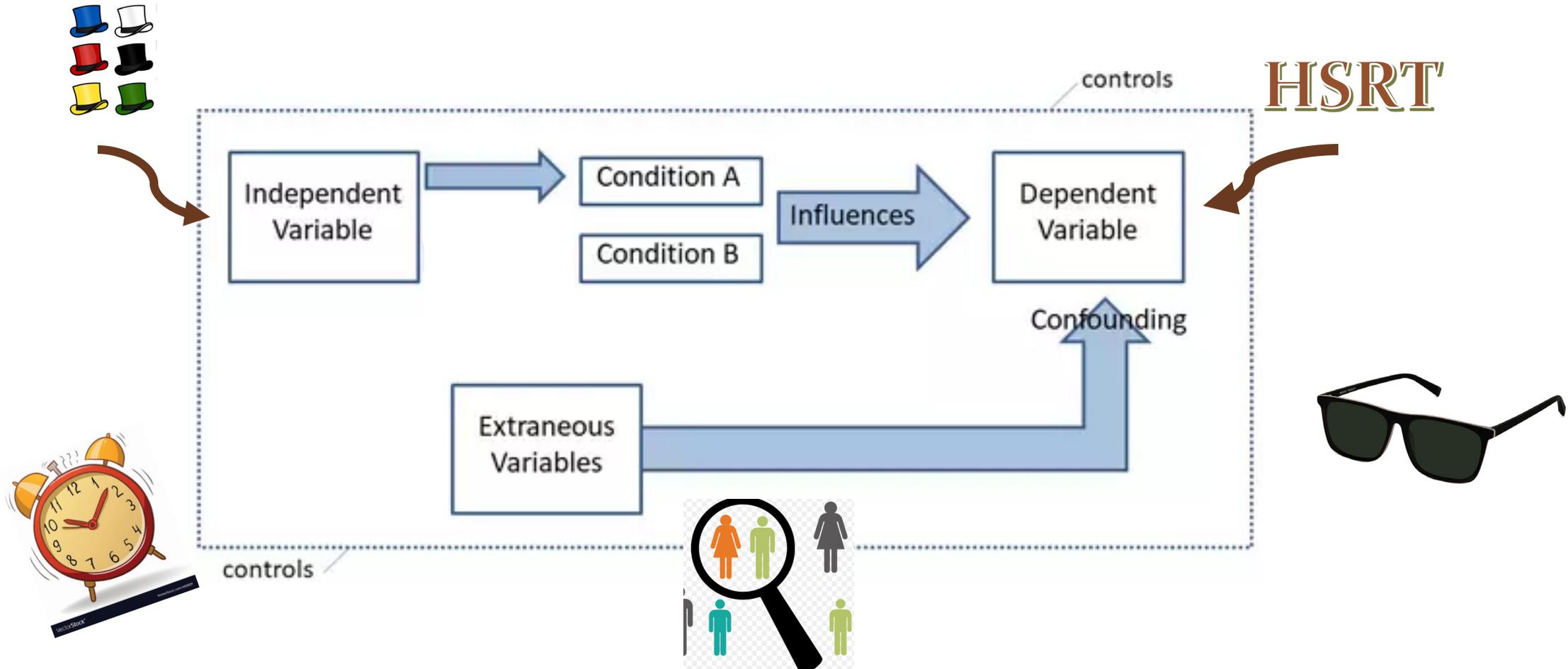
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