Critical Thinking

John Brady
MaryMargaret Sharp-Pucci
Department of Healthcare Administration
Parkinson School of Health Sciences & Public Health
What?
Why?
How?
We are not educating you for a first job. We want to give you the abilities to think, reason, and question for a lifetime.

Drew Gilpin Faust, 28th President Harvard University
Deciding to major in HCA was one of my best decisions. I continue to carry the things I learned from the program to my every career role thus far.

The critical thinking and analyzing skills I learned in your class have really set me up for success and I wanted to say thank you for everything.

HCA Alumna
Medline Product Manager
Master in Healthcare Administration, University of Michigan
What is Critical Thinking?
Exercise #1

1. Jot down your definition of critical thinking
2. Think of a situation where you thought critically
3. Think of a situation where you did not
Analyze and evaluate facts to guide decisions

Solve problems through a rational process

Draw logical conclusions

Think reflectively

Connect dots between ideas

Job, promotions, good grades, financial gain, good relationships

Bad decisions, costly errors, inaction, risky behavior, repeated mistakes
Disconnect Between Goals and Understanding

From a Study of Faculty at California Colleges and Universities

Paul, Elder, & Bartell, 1995
A Definition:

American Philosophical Association Study

• "Purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" (Facione, 1990, p. 2).

• An essential as a tool of inquiry

• A liberating force in education and a powerful resource in personal and societal life

Rowles, Morgan, Burns, & Merchant, 2013; Facione, 1990
Dynamic Components of Critical Thinking

Cognitive Processes

- Interpretation
- Analysis
- Evaluation
- Inference
- Explanation
- Self-regulation

Affective Dispositions

- Inquisitiveness
- Desire to be well-informed
- Awareness to use critical thinking
- Trust in reason
- Self-confidence in ability to reason
- Open-mindedness
- Flexibility
- Fair-mindedness
- Honesty to face personal biases
- Prudence in judgement
- Willingness to revise views (or grow)

Rowles, Morgan, Burns, & Merchant, 2013; Facione, 1990
How Can We “Teach” Critical Thinking?
EXCELLENCE IS AN ART WON BY TRAINING AND HABITUATION. WE DO NOT ACT RIGHTLY BECAUSE WE HAVE VIRTUE OR EXCELLENCE, BUT WE RATHER HAVE THOSE BECAUSE WE HAVE ACTED RIGHTLY. WE ARE WHAT WE REPEATEDLY DO. EXCELLENCE, THEN, IS NOT AN ACT BUT A HABIT.

ARISTOTLE
Framework for Inquiry

Utility of the thinking is driven by its depth

- **Critical**
  - Seeks understanding and makes the most of imperfect information through supportive evidence

- **Curious**
  - Lacks detail, but serves to spark further investigation

- **Skeptical**
  - Negative to neutral in evaluation; provides a hedge for being wrong

- **Cynical**
  - Negative evaluation and calls into question the legitimacy of idea or subject
Agile/Critical Process

**Ongoing/Flexible Pursuit for Improvement and Growth**

- **Question**
  - The Status Quo
  - Long-term Assumptions
  - What’s Missing

- **Learn**
  - Remain Curious
  - Listen
  - Hold Assumptions loosely

- **Reflect**
  - Accept Feedback
  - Your Actions
  - Others’ Actions

- **Pivot**
  - Keep Moving
  - Live Forward Not Backward

- **Risk**
  - Calculated
  - Cost/Benefit
  - Leave Comfort Zone

Anderson et al., 2005
Declaration of Interdependence

Agile and adaptive approaches for linking people, projects and value

“We are a community of project leaders that are highly successful at delivering results. To achieve these results:

• We increase return on investment by making continuous flow of value our focus.
• We deliver reliable results by engaging customers in frequent interactions and shared ownership.
• We expect uncertainty and manage for it through iterations, anticipation, and adaptation.
• We unleash creativity and innovation by recognizing that individuals are the ultimate source of value and creating an environment where they can make a difference.
• We boost performance through group accountability for results and shared responsibility for team effectiveness.
• We improve effectiveness and reliability through situationally specific strategies, processes and practices.

[©2005 David Anderson, Sanjiv Augustine, Christopher Avery, Alistair Cockburn, Mike Cohn, Doug DeCarlo, Donna Fitzgerald, Jim Highsmith, Ole Jepsen, Lowell Lindstrom, Todd Little, Kent McDonald, Pollyanna Pixton, Preston Smith and Robert Wysocki.]
Engaging Students in Critical Thinking

It’s Not Enough to Merely Demonstrate It – Practice Makes It Real

Make a Comparison

Act on Comparison

Reflect on Comparison

Are our students users of information or receivers of information?
Bloomberg’s Taxonomy

Critical Thinking

• Apply
• Analyze
• Synthesize
• Evaluate
• Justify

Do these verbs dominate your learning outcomes?
Chasing the answers
## High U.S. Maternal Mortality Rate

Maternal deaths per 100,000 live births in select countries for 2018

<table>
<thead>
<tr>
<th>Country</th>
<th>Rate per 100,000 live births</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>17.4</td>
</tr>
<tr>
<td>France</td>
<td>8.7</td>
</tr>
<tr>
<td>Canada</td>
<td>8.6</td>
</tr>
<tr>
<td>U.K.</td>
<td>6.5</td>
</tr>
<tr>
<td>Australia</td>
<td>4.8</td>
</tr>
<tr>
<td>Switzerland</td>
<td>4.6</td>
</tr>
<tr>
<td>Sweden</td>
<td>4.3</td>
</tr>
<tr>
<td>Germany</td>
<td>3.2</td>
</tr>
<tr>
<td>Netherlands</td>
<td>3.0</td>
</tr>
<tr>
<td>Norway</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Data for Switzerland and U.K. from 2017, data for France from 2012
Sources: OECD, Commonwealth Fund

## Data into Action

Evidence-based policy recommendations
**Constantly Ask Questions**

<table>
<thead>
<tr>
<th>Why</th>
<th>has maternal mortality increased over the past two decades?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>is maternal mortality higher than other developed countries?</td>
</tr>
<tr>
<td></td>
<td>does maternal mortality differentially affect mothers who are black?</td>
</tr>
<tr>
<td>What</td>
<td>changes to our health system occurred over these same two decades?</td>
</tr>
<tr>
<td></td>
<td>environmental and socio-economic factors affect maternal mortality rates?</td>
</tr>
<tr>
<td>Where</td>
<td>is maternal mortality increasing?</td>
</tr>
<tr>
<td></td>
<td>is it all over the U.S. or in specific locations?</td>
</tr>
<tr>
<td>Who</td>
<td>is affected by maternal mortality?</td>
</tr>
<tr>
<td></td>
<td>beyond mothers and families who is affected? communities, health systems, payers?</td>
</tr>
<tr>
<td>When</td>
<td>did this increase begin occurring?</td>
</tr>
<tr>
<td></td>
<td>does maternal mortality take place, under what circumstances?</td>
</tr>
<tr>
<td>How</td>
<td>can the health care system intervene?</td>
</tr>
<tr>
<td></td>
<td>can government work to reduce maternal mortality?</td>
</tr>
<tr>
<td></td>
<td>is the U.S. different than developed countries with lower rates?</td>
</tr>
</tbody>
</table>
Critical thinking is not driven by answers. It is driven by the questions we ask.
No one ever made us do this before

Practice

Structure

Confidence

Application
High recidivism for individuals with serious mental illness released from jail or prison

Why?
Disease symptoms exacerbate

Why?
Have no access to meds

Why?
Disenrolled from Medicaid

Why?
Receiving health care from justice system

Why?
Arrested, often times due to symptoms
Critical Thinking = Systems Thinking
Creating Connections

“For the want of a nail the shoe was lost,  
For the want of a shoe the horse was lost,  
For the want of a horse the rider was lost,  
For the want of a rider the battle was lost,  
For the want of a battle the kingdom was lost,  
And all for the want of a horseshoe-nail.”
Recognizing Limitations and Context
Event Creates a Spark

What Happened?

- Noise
- Clutter

Goodman, 1997
Common or Special Occurrence?

Is This a One-Time Thing...Or Do We See a Trend?

Goodman, 1997
Why Is This Happening?

*What forces are creating this behavior/situation to occur?*

Goodman, 1997
Event-Orientation

Everything Can Be Explained By “Causal” Connections; Problems Are Ultimately Reduced Back to the “Root” Cause
Behavior “emerges” from the structure of its feedback loops; root causes are not "individual"; rather they are relational to the feedback loops.
Differentiating Between Events & Systems

• Two types of thinking
  • Event Oriented
    • “Each event has a cause”
    • “If you want to solve a problem, find the cause and fix that”
  • Systems Oriented
    • “The structure of the system (causes) misbehavior.
    • “To solve the problem, system structure must be understood and be redesigned to cause people to behave sustainably as a na
What Do You See?
Systems Thinking

- **Nonsummativity**
  - The state of a system is not the sum of its component parts \(^1\)

- **Systems Thinking**
  - “The art and science of making reliable inferences about behavior by developing an increasingly deep understanding of underlying structure” \(^1\)

1. [https://www.yourdictionary.com/nonsummativity](https://www.yourdictionary.com/nonsummativity)
2. Richmond (1987)
“A New Language”

Recognize the Complexity

See the Whole

Expand the Context

See the Connections

Johnson, Anderson, Rossow. (2020)
Complex Adaptive Systems

- Composed of multiple, diverse, interconnected elements
- All are equally important
- Capable of change and learning (i.e., they are dynamic)

Johnson, Anderson, Rossow. (2020)
External Forces Affecting Health Care Delivery

- Political Climate: President/Congress, Interest Groups, Policy/Regulation
- Economic Conditions: General climate, Competition
- Technology: Biotech, Info systems
- Social Values and Culture: Ethnic & Cultural Diversity, Social Cohesion
- Global Influence: Immigration, Trade & Travel, Terrorism, Epidemics
- Population Characteristics: Demographics, Health Needs, Social Morbidity (disease, lifestyle, behaviors)
- Physical Environment: Waste/Pollution, Sanitation, Ecological balance

67.7%
How we do it

Healthcare Administration

Curriculum
Service-Learning
Writing Intensive
Internship
Capstone

Classes
Case studies
Client-facing projects
Team bids
Hack-a-thons
Competitions
Recommendations

Extra-Curricular
Case Competitions
Professional Essays
Professional Debates
Summer Internships
Student Organization
the *Wrong* question
For career success…. “a candidate’s demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than his or her undergraduate major.”

91% of employers agree
Key Concepts

Critical Thinking

• Critical thinking is systems thinking
• Interconnectedness
• A learned skill
• Requires instruction and practice
• Instructional strategies actively engage student in learning process
• Goes beyond the content; focuses on process of learning the content
• Assessment techniques challenge the intellect rather than test memory recall
Beyond competence in one’s field, organizations most value those who can \textit{think critically}, communicate effectively, and lead ethically. In other words, those with a Jesuit education.

Gonzaga University
THANK YOU