Collectively Intelligent Teams

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Disclosures

None

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Outline

- Introduction

- Why Should I Care?

- Evidence for Collective Intelligence

- Comparison to Similar Models

- Application in UAB Department of Anesthesiology and Perioperative Medicine

- Conclusion/Questions

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Introduction

- Medical School- UAB 2004

- Residency- UT Knoxville 2008

- Brookwood/Anesthesia Services of Birmingham, P.C. 2008-2018

- President- Anesthesia Services of Birmingham, P.C. 2014-2018

- Southern Anesthesia Management, 2018-2019

- UAB Department of Anesthesiology and Perioperative Medicine, May 2019

- Samford MBA- 2015-Spring 2020

Why should I care?

"The sum total of medical knowledge is now so great and wide-spreading that it would be futile for one man to attempt to acquire...a good working knowledge of any large part of the whole. The very necessities of the case are driving practitioners into cooperation. The best interest of the patient is the only interest to be considered, and in order that the sick may have the benefit of advancing knowledge,

union of forces is necessary."

~William James Mayo, MD, June 15, 1910

Why should I care?

- Increasing reliance on teams from a variety of specialties to care for patients

- Increased incidence of complexity and specialization of care

- Increasing comorbidities/incidence of chronic disease

- Initiatives for safer working hours

- Our healthcare system is not as safe, effective, efficient as it should be

- We harm patients every day

- Ongoing "scope of practice" battles across the nation

Why should I care?

According to the Institute for Healthcare Improvement, there is an average of **24 handoffs** per inpatient admission.

Why should I care?

Teamwork failures (failures in communication) account for up to 80% of serious medical errors

- Joint Commission. Sentinel event data: root causes by event type 2004-2015. www.jointcommission.org

Top 3 identified root causes for sentinel events- Human factors, leadership, and communication

- Joint Commission. Sentinel event statistics released for 2015. www.info.jcrinc.com

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Why should I care?

Medical error- the third leading cause of death in the US.

▪Makary, MA, Daniel. M. (2016). *BMJ*. 353;i2139.

Teamwork results in better patient care and outcomes

- Horak, B.J. et al. (2004) *Journal of Healthcare Quality*. 26(2), 6-13.
  - Teambuilding, behavioral ground rules between nursing and house staff
- Gitell, J.H. et al. (2000) *Medical Care*. 38(8), 807-819.
  - Relational coordination, mutual respect- impact on pain scores, LOS, quality of care

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Why should I care?

Team-building is one of the most useful organizational interventions to improve morale and productivity in the workplace and to ensure the **mental and physical health of employees**.

▪Guzzo RA, Shea GP. Group performance and intergroup relations. In: Dunnette MD, Hough LM, eds. *Handbook of Industrial and Organizational Psychology*. Palo Alto, CA: Consulting Psychologists Press; 1992:269-313.

Residents in emergency medicine who **view their work groups as cohesive** appeared **more satisfied** with their jobs and **less stressed** than those who experienced less group cohesiveness.

▪Heyworth J, Witley TW, Allison EJ, Revicki DA. Predictors of satisfaction among SHOs during accident and emergency medicine training. *Arch Emerg Med*. 1993;10:279-288.

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Why should I care?

Members of work groups characterized by **positive teamwork** evidenced enhanced coping, **more job satisfaction**, less strain, and **improved scores of measures of mental health.**

▪Carter AJ, West MA. Sharing the burden: Teamwork in health care settings. In: Firth-Cozens J, Payne R, eds. *Stress in Health Professionals: Psycological and Organisational Causes and Interventions*. New York, NY: John Wiley and Sons; 1999;191-202.

One specific product is a **more cheerful nursing staff**, one of the factors that correlates with **patient satisfaction**.

▪Murphy LR. Organisational interventions to reduce stress in health care professionals. In: Firth-Cozens J, Payne R, eds. *Stress in Health Professionals: Psycological and Organisational Causes and Interventions*. New York, NY: John Wiley and Sons; 1999;149-162.

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Why should I care?

Teams offer the promise to improve clinical care because they can aggregate, modify, combine, and apply a **greater amount and variety of knowledge** in order to make decisions, solve problems, generate ideas, and execute tasks more effectively and efficiently than any individual working alone.

- Larson, J.R. (2010). *In Search of Synergy in Small Group Performance*. Psychology Press, New York, NY.

- Synergy is real, but it is difficult

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Collective Intelligence

Anita Woolley- Associate Professor of Organizational Behavior and Theory, Tepper School of Business, Carnegie Mellon University

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Collective Intelligence

Woolley, A.W. et al. (2010). Science. Vol. 330; 686-688.

- Psychologists have repeatedly shown that a single statistical factor-general intelligence (g) or IQ- emerges from the correlations among people's performance on a wide variety of cognitive tasks and how that predicts performance on future tasks

- No one has systematically examined whether a similar kind of "collective intelligence" (c) exists for groups of people

- Hypothesis: groups, like individuals, have characteristic levels of intelligence (c) which can be measured and used to predict the group's performance on a wide variety of future tasks

Collective Intelligence

- 2 studies, 699 people, working in groups of 2 to 5

- Collective intelligence is the inference drawn when the ability of a group to perform one task is correlated with that group's ability to perform a wide range of other tasks

- Specifically, determine whether the collective intelligence of the group as a whole has predictive power above and beyond what can be explained by knowing the abilities of the individual group members

- Collective intelligence is a property of the group itself, not just the individuals in it

Collective Intelligence

- Individuals completed tasks working alone- individual intelligence was a significant predictor of performance on the task (r=0.33, P=0.009)

- When the same task was performed by groups, the average individual intelligence of the group members was *NOT* a significant predictor of group performance (r=0.18, ns)

- When both individual intelligence and collective intelligence (*c*) are used to predict group performance, *c* is a significant predictor (β=0.36, P=0.0001), but average group member intelligence (β=0.05, ns) and maximum member intelligence (β=0.12, ns) are *NOT*

Collective Intelligence
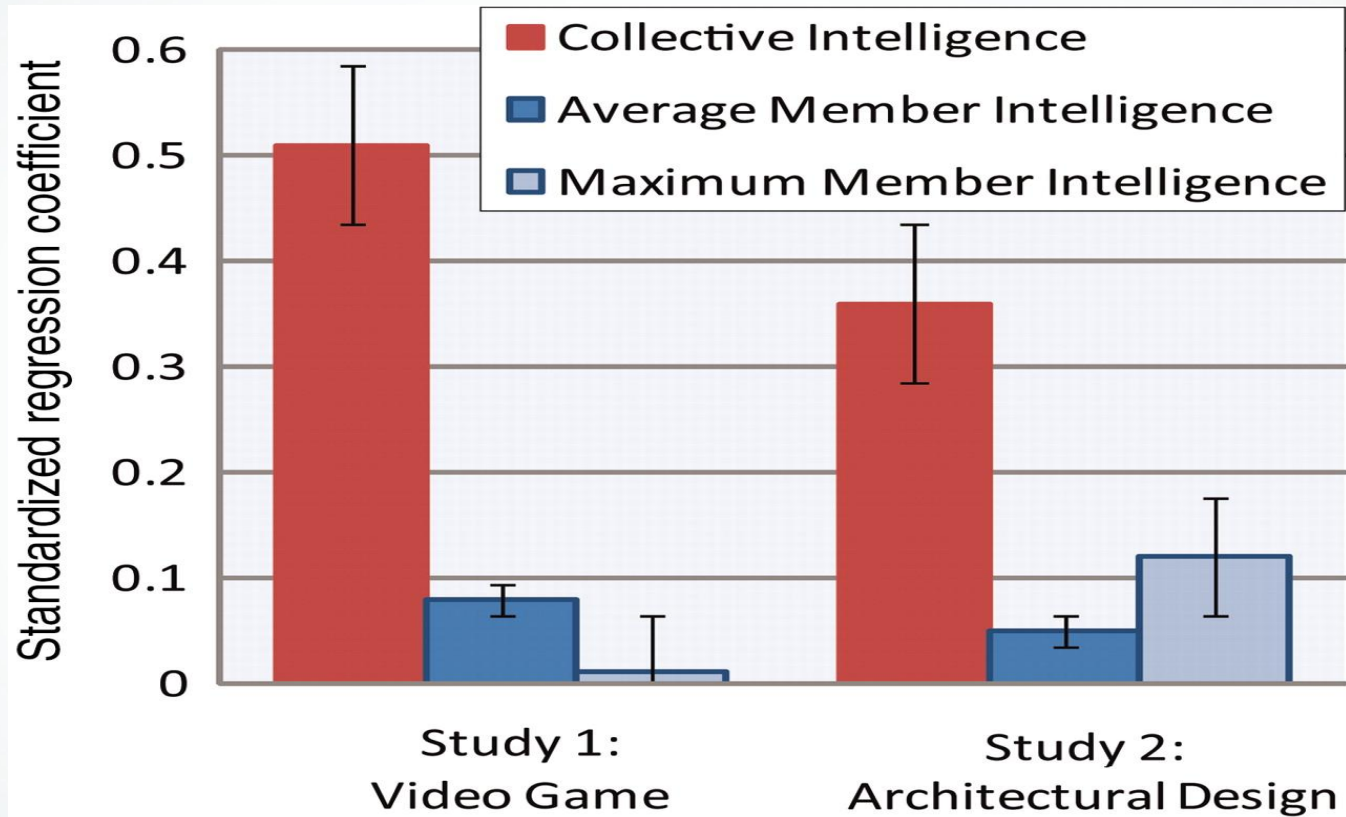
Collective Intelligence

If SMART TEAMS are not simply teams of smart people, what leads to a collectively intelligent team?????

- Cohesion, motivation and satisfaction did not

- 3 factors significantly correlated with "c"

  - Positively correlated with average <u>social sensitivity</u>- measured by "Reading the Mind in the Eyes"

  - Negatively correlated with <u>variance in speaking turns</u>- measured by sociometric badges

  - Positively correlated with number of <u>females</u> in the group

Collective Intelligence

Reading the Mind in the Eyes

Collective intelligence

The Big 3

- Social perceptiveness: ability to infer others' mental states, such as beliefs or feelings, based on social cues. The average social perceptiveness of team members is predictive of "c"

- Greater amounts of participation and more equal participation are associated with higher "c"

- Females- generally more socially perceptive

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Gender Differences in Emotional Intelligence
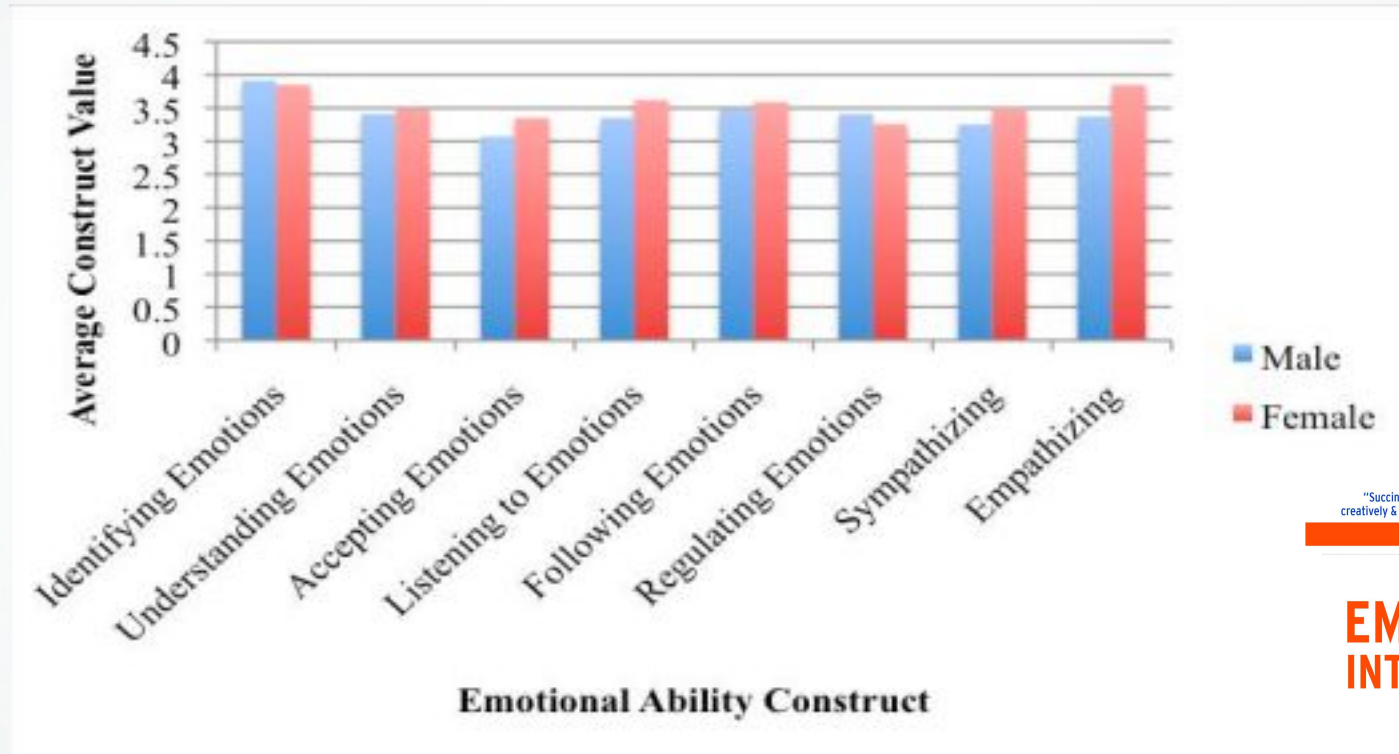
Collective Intelligence

Conversational Turn Taking/Speaking up

- Likelihood of speaking up requires psychological safety

- "Sense of confidence that the team will not embarrass, reject, or punish someone for speaking up"

  - Edmondson, A.C. (1999). *Psychological Safety and Learning Behavior in Work Teams*. Admin Psy Q. 44(2):354.
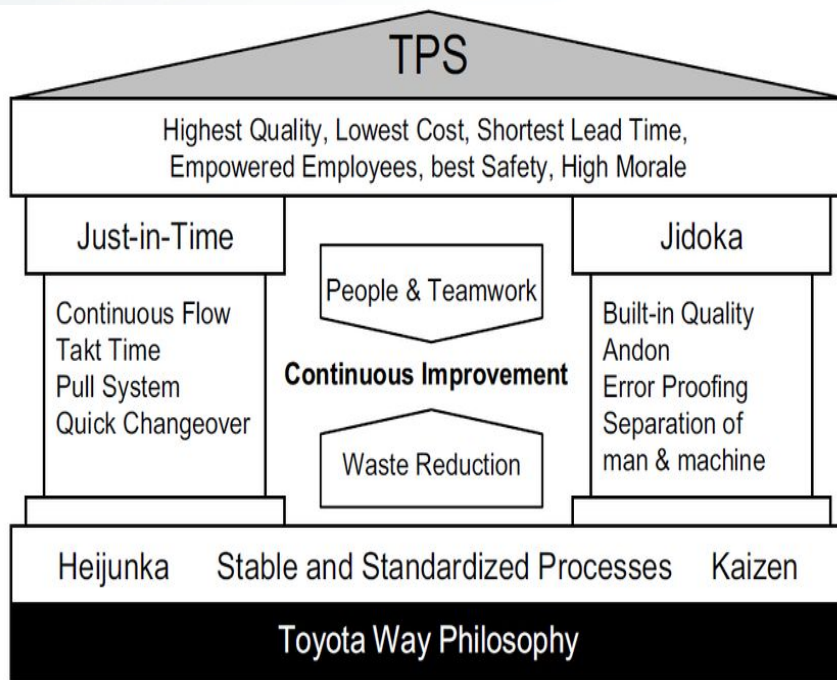
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Collective Intelligence

Speaking up

- Lack of psychological safety often from being in "lower status roles or professions" can lead team members to avoid speaking up even when they know they have something to contribute.

- Leader inclusiveness predicts psychological safety

- Psychological safety predicts engagement in quality improvement work

  - Nembhard, I.M, Edmondson, A.C. (2006). *Making it safe: The effects of leader inclusiveness and professional status on psychological safety and improvement efforts in healthcare teams.* J Organ Behav. 27(7). 941-956

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Stop the line

Jidoka- automation with a human touch

Work stops immediately when an error occurs

TPS

Highest Quality, Lowest Cost, Shortest Lead Time, Empowered Employees, best Safety, High Morale

Just-in-Time	People & Teamwork	Jidoka
Continuous Flow		Built-in Quality
Takt Time		Andon
Pull System	Continuous Improvement	Error Proofing
Quick Changeover		Separation of man & machine
	Waste Reduction	

Heijunka   Stable and Standardized Processes   Kaizen

Toyota Way Philosophy

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Toyoda Weft-Break Auto Stop

Sakichi Toyoda

*Also invented warp-break auto stop

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Toyota Production System
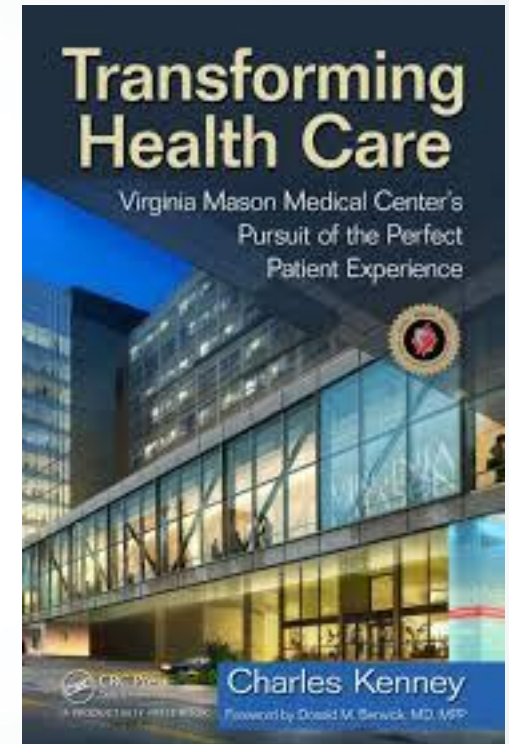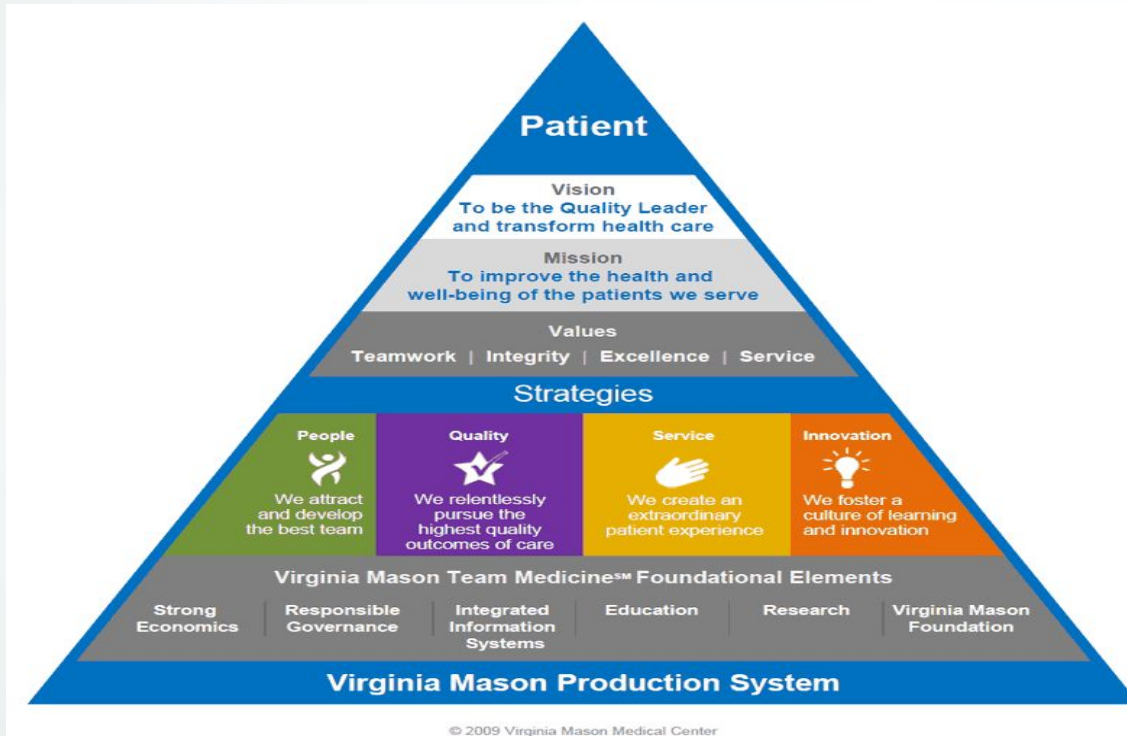
Leadership attributes that promote psychological safety

- Eliciting information from other team members- explicitly asking for contradicting viewpoints or un-discussed information *paradox mindset*

- Showing appreciation for members' contributions

- Providing constructive responses/feedback

- Researchers have consistently found that when members engage in inclusive behavior, other team members feel more psychologically safe and are more likely to speak up about relevant information

  - Edmondson, A.C. (2003). *Speaking up in the operating room: how team leaders promote learning in interdisciplinary action teams*. J Manage Stud. 40(6). 1419-1452.

"The currency of safety is information"- Ivan Pupulidy

- Learning environment- trust, sharing, flow of information

- Judgmental environment- pain, distrust, silence

- "Anything we do to degrade our ability to gather information affects the safety of the system"

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What happens when we don't speak up

Korean Air Flight 801- August 6, 1997. 228 deaths.

CFIT- Controlled Flight Into Terrain

"Airport not in sight"- numerous times, minutes before impact

"Let's make a missed approach"- 5 seconds before impact

Successful Teams

Teaming

- Amy Edmondson- Novartis Professor of Leadership and Management, Harvard Business School.

- Fast paced environments, shifting mix of projects, shifting team of partners

Teaming

- In contrast to stable teams, teaming involves fast paced environments where people work on a shifting mix of projects with a shifting team of partners.

- Teaming is about identifying essential collaborators and quickly getting up to speed on what they know so you can work together to get things done.

- This more flexible teamwork is on the rise because work is increasingly complex and interdependent, and the time between an issue arising and when it must be resolved is shrinking fast

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Teaming

Characteristics of a teaming culture

Edmondson, AC. (2013) *The Three Pillars of a Teaming Culture*. Harvard Business Review.

- Curiosity- drives people to find out what others know, what they bring to the table, and what they can add.

- Passion- fuels enthusiasm and effort, makes people care enough to go all out.

- Empathy- the ability to see another's perspective, which is critical to effective collaboration under pressure

- Willing to take risks to learn fast- FAIL FAST

- Humble in the face of the challenge ahead- situational humility

Situational Humility

"It's hard to learn if you already know. *We are wired to think we know*. When teaming works you can be sure that some leaders had been crystal clear that they didn't have the answers."

"It's hard to speak up, to ask for help, or offer an idea that might be a stupid idea if you don't know people very well. **Situational humility**, when combined with **curiosity**, creates a sense of **psychological stability** that allows you to take risks with strangers."

Amy Edmondson

Simon Sinek- Trusting Teams

LEADERSHIP IS NOT- how can I get the most out of my people?

LEADERSHIP IS- how can I create an environment where my people can work at their natural best?

- an environment where people aren't afraid to raise their hands and say "I made a mistake", "I need help, I don't know what I'm doing", "I'm having trouble at home and it's affecting my work", "I'm scared".

- no fear of humiliation, retribution, or firing

- expectation that bosses and colleagues will rush to your aid

TRUSTING TEAMS

THE INFINITE GAME

THE INFINITE GAME
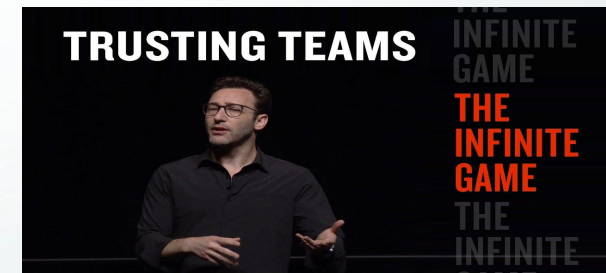
THE INFINITE GAME

Trusting Teams

"If you DO NOT have trusting teams, what you DO have is a group of people who show up to work every single day LYING, HIDING, and FAKING."

Simon Sinek-The Infinite Game

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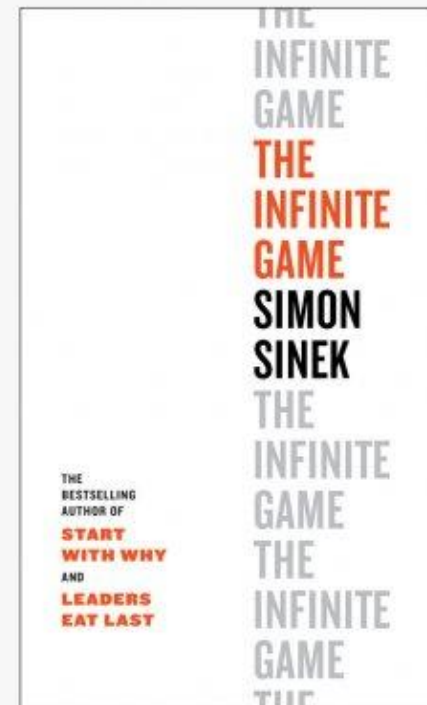
Mutual Learning vs Unilateral Control Mindset

UNILATERAL CONTROL

Values
- Be right
- Win, don't lose
- Minimize expressions of negative feelings
- Act rational

Assumptions
- I understand the situation; those who disagree don't
- I am right; those who disagree are wrong
- I have pure motives; those who disagree have questionable motives
- My feelings and behaviour are justified
- I am not contributing to the problem

ROGER SCHWARZ
Bestselling author of *The Skilled Facilitator*

SMART LEADERS SMARTER TEAMS

How You and Your Team

GET UNSTUCK to **GET RESULTS**

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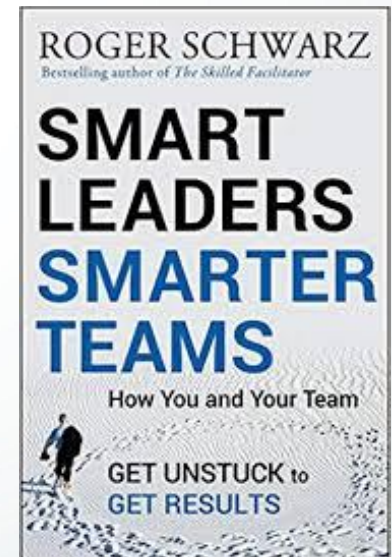
Mutual Learning vs Unilateral Control Mindset

Mutual Learning Model*

Core Values
- Transparency
- Curiosity
- Accountability
- Informed choice
- Compassion

*Based on research of Argyris and work of Roger Schwarz

Assumptions
- I have some information, others have other information
- Each of us may see things the others do not
- Differences are opportunities for learning
- People may disagree with me and have pure motives

Strategies (Ground Rules)
- State views and ask genuine questions
- Share all relevant information
- Use specific examples and agree on what important words mean
- Explain reasoning and intent
- Test assumptions and inferences
- Focus on interests not positions
- Jointly design the next steps
- Discuss undiscussable issues
- Use a decision-making rule that generates the level of commitment needed

Results
- Increase learning and understanding, reduce unproductive conflict and defensiveness
- Increase trust
- Help people make better decisions and stick to them
- Decrease time to implement decisions
- Improve working relationships
- Increased quality of work life — group member satisfaction

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Bestselling author of *The Skilled Facilitator*
SMART LEADERS SMARTER TEAMS
How You and Your Team
GET UNSTUCK to GET RESULTS

Team of Teams

"Today's rapidly changing world, marked by increased speed and dense interdependencies, means that organizations everywhere are now facing dizzying challenges, from global terrorism to health epidemics to supply chain interruption to game-changing technologies. These issues can be solved only by creating sustained organizational adaptability through the establishment of a ***team of teams***."

"Harvard Business School teams expert **Amy Edmondson** explains 'great teams consist of individuals who have learned to ***trust*** each other…**They have discovered each others strengths and weaknesses, enabling them to play as a coordinated whole**."

US Army General (retired) Stanley McChrystal
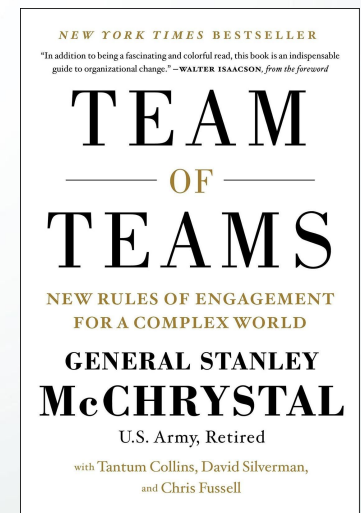
Emotional Intelligence

Capability of individuals to recognize their own emotions and those of others, discern between different feelings and label them appropriately, use emotional information to guide thinking and behavior, and manage emotions to adapt to environments.

Daniel Goleman- EI accounts for 67% of the abilities deemed necessary for superior performance in leaders, and mattered twice as much as technical expertise or IQ.

- Goleman, D. (1998). Working with Emotional Intelligence. New York, NY. Bantam Books.

EMOTIONAL & SOCIAL INTELLIGENCE LEADERSHIP COMPETENCIES
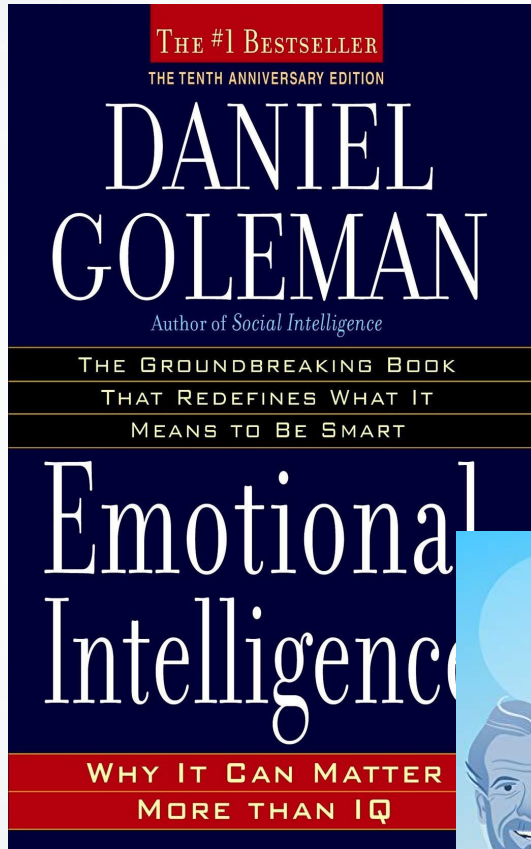
SELF AWARENESS

SELF MANAGEMENT

SOCIAL AWARENESS

RELATIONSHIP MANAGEMENT

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Emotional Intelligence

Emotional Intelligence

Primary traits

- Self awareness

- Self regulation

- Social skill

- Empathy

The 18 EI Competencies in 4 Domains

SELF-AWARENESS
- Emotional self-awareness
- Accurate self-assessment
- Self-confidence

SOCIAL AWARENESS
- Empathy
- Organizational awareness
- Service orientation

SELF-MANAGEMENT
- Emotional self-control
- Transparency
- Adaptability
- Achievement
- Initiative
- Optimism

RELATIONSHIP MANAGEMENT
- Developing others
- Inspirational leadership
- Influence
- Change catalyst
- Conflict management
- Teamwork and collaboration

Source: Goleman D, Boyatzis RE, McKee A. Primal Leadership: Learning to Lead with Emotional Intelligence. Harvard Business Press; 2004

NEJM Catalyst (catalyst.nejm.org) © Massachusetts Medical Society

Anesthesia Care Team Optimization Committee

- Facilitated discussions between MDs and CRNAs

- Early sessions- listening only

- Discovered common goals, understood different perspectives

- Working together to redefine future state of UAB Anesthesia Care Team built upon common mission, vision, and core values

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Leadership Development Office

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Leadership Development Office
Better Leadership. Better Outcomes.

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Transition to Practice Curriculum

- Quarterly evening sessions beginning 9/2020

- Needs Assessment- Outgoing Resident Interviews, IRB Approval

- Future TTP Session Topics

    - Business Topics

        - Choosing the Right Job

        - Malpractice Insurance

        - Billing and Compliance

        - Healthcare and Contract Law

        - Personal Finance

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TRANSITION ▶ TO PRACTICE

ANESTHESIOLOGY & PERIOPERATIVE MEDICINE

Transition to Practice Curriculum

- Future TTP session topics
    - Social Emotional Learning topics
        - Emotional Intelligence
        - Life and Personal Strategy
        - Physician Burnout, Addiction, Suicide, Wellness
        - Conflict Resolution
        - Leadership and Teamwork

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TRANSITION ▶ TO PRACTICE

ANESTHESIOLOGY & PERIOPERATIVE MEDICINE

Transition to Practice Curriculum

All residents and fellows are invited to

LEADERSHIP & TEAMWORK
Inaugural Session of the Transition to Practice Series

Virtual Meeting
Wednesday, September 16th
4:30-6 P.M.

Presented by Drs. Matthew Sherrer, Dan E. Berkowitz, Juhan Paiste and David Miller

Email **velison1@uabmc.edu** for the Zoom link.

DEPARTMENT OF ANESTHESIOLOGY AND PERIOPERATIVE MEDICINE

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All residents and fellows are invited to

The Second Session of the Transition to Practice Series

Virtual Meeting
Wednesday, December 2, 2020
4:30-6 P.M.

"Personal Finance"
with Patrick Morgan, CFP and
Senior Vice President Morgan Stanley

Email **velison1@uabmc.edu** for the Zoom link.

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All residents and fellows are invited to

The Third Session of the Transition to Practice Series

Virtual Meeting
Wednesday, March 10th
4:30-6 P.M.

"Emotional Intelligence"
featuring Elizabeth Duggan, M.D., and
Matthew Sherrer, M.D.

Please contact Victoria Elison for the Zoom link.

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Wrapping up

- Unilateral control isn't the only form of leadership

- Smart teams aren't simply collections of smart people on a team

- Work on social sensitivity, empathy- seek first to understand…

- Encourage speaking up by creating psychological safety

- Elicit ideas, show appreciation, provide constructive feedback

- Try to understand others' views- "I could be wrong"

- Be suspicious of any plan that involves omitting a group altogether-

  - WE is greater than ME!!!

We can see things completely differently....and both be RIGHT

- "Gestalt switch"

- Are perceptions cognitively

impenetrable?????

Thank you

"The formation of ideas is shaped more by the iterative interplay within the group than by an individual tossing in a wholly original concept. The sparks come from ideas rubbing against each other rather than as bolts out of the blue."

Isaacson, W. (2014). *The Innovators: How a group of hackers, geniuses, and geeks created the digital revolution.* Simon and Schuster, US.

Questions?

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