

Constructive Problem Solving

Outline:

- Activity (4 min)
 - Marshmallow spaghetti tower
 - Goal: build the tallest standing tower possible
 - 3 minutes to complete
 - 25 Marshmallows and 50 spaghetti straws
- Introduction
 - UIUC Study
 - “Studies stemming from the group synergy literature illustrate not only that groups do not manage to achieve strong cognitive synergy (perform better than their best individual member - Laughlin, Gonzalez & Sommer, 2003; Meslec & Curseu, 2013) but sometimes they even have difficulties to achieve weak cognitive synergy (they perform worse than the average individual performance in the group - Buehler, Messervey & Griffin, 2005; Hinsz, Tindale & Nagao, 2008)”
 - Our topic (Constructive Problem Solving)
 - Self introductions
 - Agenda
- Body (4 min)
 - Framing & Goals (effective goal setting)
 - The first step before going about anything is to create an effective goal and ensure everyone is on board with it
 - This is proven through a study done by the British Journal of Educational Psychology that showed how strong achievement goals led to great success in solving problems among low achievers, as opposed to the lack of such clear and defined goals
 - The process in which that should be done is through individually deciding upon a goal, discussing it with your group in order to all be on the same page and agree upon a goal, and finally, to follow through on it and stick to it the entire time
 - Ex: Quarterback pre-snap tells their teammates the entire playcall to their teammates and then enacts that exact play out on the field
 - Heuristic decision making (solution for pressure decisions)
 - Heuristic - mental rules of thumb to simplify the decision making process
 - Less is more effect: shows that heuristics in uncertainty actually do the opposite by reducing effort and improving accuracy

- Uncertainty makes calculating the best outcome impossible
 - Reduces large amounts of noise
 - A combination of experiences within the team to optimize the strategy
- Many different Heuristic types
 - Imitation
 - Take the best (Gigerenzer, Max Planck Institute)
 - For dominant cues
 - Ex: Jeff Bezos used a heuristic known as the fast and frugal tree to hire (exceptional ability -> admirability -> raise average effectiveness)
- Key: stick to your heuristic and let it help your team
- Idea Linking (building on each other's ideas)
 - Introduction
 - Constructive problem solving in teams isn't just about speed, framing, or role assignments — it also depends on how team members interact while generating solutions.”
 - Introduce subtopic: “One key practice is Idea Linking — when team members explicitly build on each other's ideas before adding their own.”
 - Define Idea Linking
 - “Instead of sharing ideas in isolation, team members acknowledge and connect to the previous contributions, creating a chain of constructive input, ensuring that solutions incorporate multiple perspectives and reduce redundancy or conflict.”
 - Research Support
 - *Instructional Science* study on team learning: Found that effective team learning happens when members actively build shared mental models, essentially linking ideas to construct a common understanding.
 - Wrap Up Slide
 - Idea linking turns collaboration from a mix of voices into a shared vision
- Alignment & Conflict (conflict resolution and cohesiveness)
 - Alignment - shared understanding of goals, constraints, and decision rules
 - Conflict - friction around processes that can hinder a team's overall performance
 - Achieve success through roles
 - Maximize alignment
 - Minimize conflict

- Why does it work?
 - Leverage personal strengths
 - Reduce ambiguity for who does what
 - Serve as a key way to re-route disagreements
 - Business Strategy Journal (Robinson)
 - Two types of conflict
 - Productive - task focused, surfaces new ideas, clarifies assumptions
 - Destructive - person-targeted, blame calling, ineffective
 - IMPORTANT: effective roles diminish destructive conflict but not productive conflict, increasing synergy
- Conclusion
 - How did it go? What made y'all succeed/fail?
 - Framing & Goals -
 - Heuristic:
 - Imitate design
 - Take best / most qualified member's plan and run with it (satisficing)
 - "One level before it leans"
 - Idea Linking
 - When the groups were brainstorming
 - Instead of just blurting out your ideas before you speak you can try to incorporate an element from the previous idea you liked into your design to help combine the best part of each goal
 - Alignment and Conflict
 - Closing
 - With that being said
 - These strategies aren't a clear cut way to find success in teams, but serve as useful models to apply when you find yourself on your next team.

References

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