

Project Worksheet 5
Creating CLDs

Building Causal Loop Diagrams

Elements:

- One or more feedback loops that are either reinforcing or balancing
 - **Reinforcing Loops** compound change in one direction with more change in that direction (virtuous or vicious circles; destabilizing)
 - **Balancing Loops** try to bring things to a desired state (goal seeking; stabilizing)
- Cause and effect relationships among the variables
 - variable A increases or changes, variable B increases or changes in the same direction (s)
 - variable A increases or changes, variable B decreases or changes in the opposite direction (o)
- Delays
 - too long to perceive feedback
 - too long to measure results
 - too long to decide how to respond to results
 - too long to implement solutions

With your BOT graph from Worksheet 4 in front of you, construct a Causal Loop Diagram (CLD) using the identified variables. Be sure to characterize the relationships between variables as s—same or o—opposite. Identify any loops you draw as R—Reinforcing (an even number of o's or none) or B—Balancing (an odd number of o's). If the diagram is complex (more than one loop) finish drawing one loop completely before branching off into another.

Building CLDs With Your Team Tips

- Use newsprint.
- Engage several versions of the story.
- Invite diversity of information, points of view, and opinion.
- Realize that the primary goal is insight and understanding into complex behavior, not building a perfectly accurate diagram. If a session leads only to discovering what the right questions are, consider it a success.
- Maintain a spirit of inquiry during this process, not advocacy.
 - Encourage the airing of assumptions.
 - Expect controversy.
- Close one loop before working on related branching loops.
 - If a variable has multiple consequences (e.g., when I send a student to the office, they get the impression that I can't handle their behavior AND they miss work on what we are doing), try combining them into one term in order to finish the loop you are working on (e.g., negative consequences for the student).
 - These can be unpacked later when working on specific tactics for improving the situation.
 - The central loop might show how a system is supposed to work, while additional loops may show what goes wrong.
- Be patient with the process.
 - Resist the pressure to “solve” a problem with a “quick fix.”
 - Be mindful that solutions that work are typically in the long cycle.
- Consider the difference between short and long term consequences. Add new loops to show long term consequences that differ from short term consequences (e.g., many student discipline solutions that “work” in the short run, cause bigger problems in the long run).
- If a link between two variables is unclear, try “slowing” the link down by adding a variable between them.
- Be sure to go around the loop and “tell the story” to check for accuracy and reasonableness.
- In Balancing loops, try to identify the goal of the system and indicate it's presence on the diagram as “Desired _____.”
- Encourage colleagues to practice building diagrams with classroom processes that they are familiar with (E.g., When too much homework is assigned, students are grumpy the next day. Their grumpiness leads to behavior problems. The behavior problems cost time on task in the classroom, which leads to what we don't get to being assigned for homework on top of the scheduled homework, which leads to too much homework being assigned.)
- Check with others not on your team, especially if your team is homogeneous (e.g., all teachers). Ask stakeholders with other roles in the system (e.g., administrators, parents, bus drivers, etc.) what they think.
- Recognize that there is no “final” or “correct” diagram. This is a learning process.
 - Never present the diagram as a final product.
 - Always mention that the work on this is tentative and evolving.