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TRIZ : Cause and Effect Chain (CEC) Analysis & Trimming

by

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Learning Outcome



- Expected Outcome

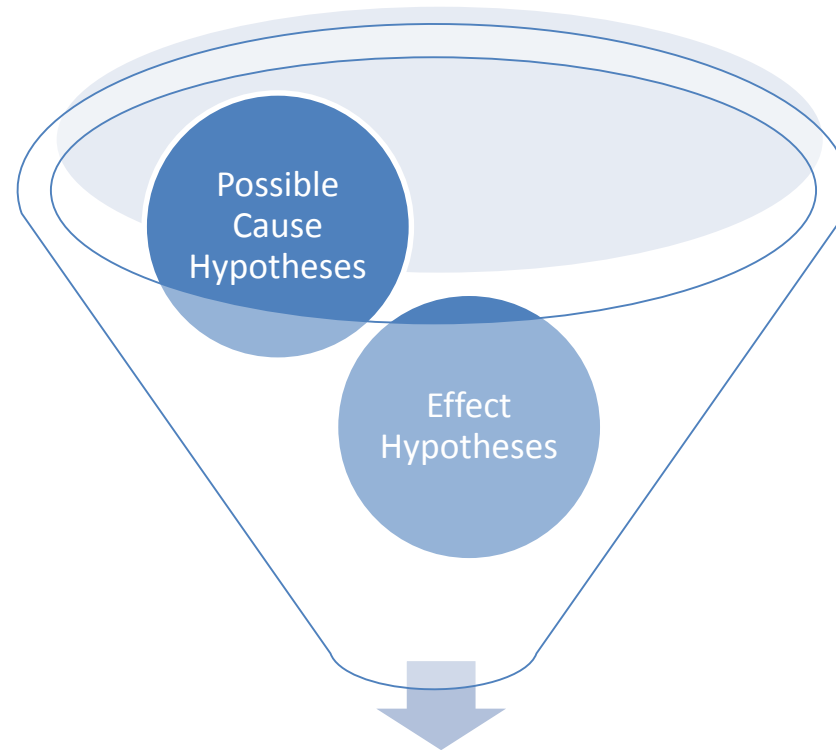
Students will be able to understand and apply Cause & Effect Chain and Trimming tools in solving any engineering problems or contradictions

- References

Yeoh, T.S., Yeoh, T.J. & Song, C.L. (2016). *Theory of Inventive Problem Solving; TRIZ*. Firstfruits Sdn. Bhd., Malaysia.



Cause & Effect Chain (CEC) Analysis



CEC Analysis



CEC Process



Step 1

- Agree on the problem and write it in the *effect* box

Step 2

- Brainstorm about likely causes & sort them into major categories/branches depending on the method chosen

Step 3

- Continue to brainstorm and generate a list of causes & fill them in the appropriate categories/branches

Step 4

- Keep asking “Why?” and “Why Else?” for each cause until a potential root cause been identified



CEC Process (cont.)



Step 5

- Use team's best collective judgment to choose several areas they feel are most likely causes & eliminate the unlikely causes

Step 6

- Use the reduced list of likely causes to develop respective hypothesis to prove the group's theory

Step 7

- Validate the hypothesis to confirm the likely root cause, and proceed to implement the solution



Trimming



- Method of eliminating components from an Engineering System to reduce or eliminate the disadvantages of those Trimmed Components
- Aim: to increase the efficiency and reduce the cost of the Engineering System



Trimming (cont.)



<https://pixabay.com/en/chair-wooden-hard-seat-seating-316889/> by Kaz



<http://home.bt.com/images/chairless-chair-a-wearable-device-that-will-let-you-sit-anywhere-you-want-136419596484503901-170714171036.jpg>



By Imaduddin

Communitising Technology

Conclusion of The Chapter



- Cause & Effect Chain (CEC) Analysis is one of tool in TRIZ that can be deployed in searching the root cause in a structured method.
- Trimming is a tool in TRIZ that can increase the efficiency & reduce the cost of Engineering System.



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