ROOT CAUSE ANALYSIS

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Case 1

- At UHD, students absolutely refused to use student e-mail system
  - <30% said the best way to get in touch with them was through Gatormail
  - 70+% said they preferred their personal e-mail
  - 40% said they opened their GM < 1 time a semester

- Creates Problems
  - FERPA issues
  - Important information is lost, ignored, etc.
  - No way to systematically communicate with the student body
Our assumption and solution

- Assumed: If they only knew GM they would love (and use) GM.

- Solution: Drive student use (based on the “Nudge” theory)
  Introduced GM in orientation
  Tied it to all critical systems (FA, Bb, Reg, wait-listing, etc.)
  Strongly encouraged faculty to use GM
  NAG
Result

- At UHD, students absolutely refused to use student e-mail system
  - <30% said the best way to get in touch with them was through Gatormail
  - 70+% said they preferred their personal e-mail
  - 40+% said they accessed Gatormail <1 time a semester
What should we have asked?

- Data give us the **what** (70% preferred personal e-mail)
- We failed to ask the **why**.
The why:

- “GatorMail is a great way to not get a hold of me until a month or two later... “

- “Would like to be able to set up own e-mail client to use gatormail address. Also - "gator" feels juvenile and unprofessional. So: would like to be able to check, download, sort & organize, read & reply an @uhd.edu student account along with my other personal and business e-mail accounts (within the same client) - as well as have web access when having to use a public device.”
“Gator mail is useless, fire IT department PLEASE. Design a simple to use, large email for UHD and people will start using.”

“I wish there were more choices about the types of emails sent. I feel I spend a lot of time deleting the bulletin email. I would prefer to have emails that pertains to my degree or department sent to me,” complained one student.”
“It aggravates me that UHD allows solicitors access to Gatormail. I receive more junk mail than I do from the university.”
Solution 2.0

- Software Issue: Either need a new system or we need to fix what we have
- AND
- Policy Issue: Address the spam problem
Root Cause Analysis: An interactive method of problem solving that:

- **Systematically** identifies the range of potential causes

- Uses data to **test** the validity and **weigh** the impact of each potential cause

- Targets solutions at the **validated** causes which have the **greatest influence** on the phenomena
When we don’t ask the why:

- We waste time
- We waste resources
- We don’t fix the problem
- We frustrate our colleagues & students
- We destroy the collegiality within our communities of practice
A (lightening) quick trip through RCA

- Part 1: Defining issues
- Part 2: Identifying possible causes
- Part 3: Using Data to Validating & Weighting Causes
- Part 4: Finding solutions
- Part 5: Implementation iteration refinement sustainment
Part 1: Articulate the issue

A problem is:
- a deviation from a requirement or expectation;
- when "actual" is different from "should";
- an undesirable event, situation, or performance trend; and/or
- the primary effect critical for a situation to occur.
<table>
<thead>
<tr>
<th>Example</th>
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<tr>
<td>a deviation from a requirement or expectation;</td>
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<tr>
<td>Faculty are not posting their syllabi as required by state statute</td>
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<tr>
<td>when &quot;actual&quot; is different from &quot;should&quot;;</td>
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<tr>
<td>Pass rate for demographic A is 70% but pass rate for demographic B is 30%</td>
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<tr>
<td>an undesirable event, situation, or performance trend;</td>
</tr>
<tr>
<td>Enrollment is trending downward</td>
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<tr>
<td>the primary effect critical for a situation to occur.</td>
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<td>We don’t retain students so our grad rates are low.</td>
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</tbody>
</table>
- Clearly articulate the problem and keep it visually in front of the group as you work
Well-articulated problems:

- Focus on the gap between what is and what should be
- It states **what is wrong, not why** it is wrong.
Other characteristics

- It is measurable.
  - States how often, how much, when.
  - Avoids broad generalizations
  - Avoids ambiguous descriptors like “bad morale,” “low productivity,”

- If we state measurable language, we can measure progress toward the solution (assessment/success criteria).
- Forces us to see if we really do have a problem
Avoid "lack of" and "no" statements which imply solutions

- “Infant mortality has increased by 7% over the last 5 years due to a lack of food“

It highlights the significance of effects.
Shaping the conversations

- Set a time limit
- Keep people focused
- Start with the general statement and refine:
# Students don’t pass English

<table>
<thead>
<tr>
<th>Question</th>
<th>Details</th>
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<tbody>
<tr>
<td><strong>When</strong></td>
<td>When don’t they pass? (Long/short/summer semester? F2F? Online?)</td>
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<tr>
<td><strong>Where</strong></td>
<td>Specifically where are they not passing (DE, 1301, 1302?)</td>
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<tr>
<td><strong>Who</strong></td>
<td>Who is not passing? (FTIC, Dev Ed, Transfer, math majors?)</td>
</tr>
<tr>
<td><strong>How Much</strong></td>
<td>The quantitative part: How many are not passing?</td>
</tr>
<tr>
<td><strong>How Many</strong></td>
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</tbody>
</table>
Well-defined issue statements

- 72% of TRANSFER students failed the university writing exam, thus delaying graduation.
- 60% of ALL Eng 1302 students do not pass on their first attempt, driving up time to degree, cost of education.
- 70% of student prefer to communicate with the University through their personal e-mail account making it difficult to communicate important information with the student body.
2. Identifying the **why**

- **Structure**
  - Make sure you have the right folks in the room
  - Place a time limit on the discussion
  - Have the issue statement posted for the group to view

*Most difficult step*
<table>
<thead>
<tr>
<th>Strategies</th>
<th>May result in finger-pointing</th>
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<tbody>
<tr>
<td>Facilitator must build trust</td>
<td>• set a collegial tone</td>
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<td>• set ground rules</td>
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<td>• presume competent colleagues</td>
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<td></td>
<td>• focus on fixing PROCESS not people</td>
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<td>• keep the torches and pitchforks in check</td>
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<td></td>
<td>• seek insight from/validate the contributions of those closest to the problem</td>
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<tr>
<td>Strategies</td>
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<tr>
<td>May have to let go of assumptions, biases, etc.</td>
<td>“Suppose a colleague from another institution brought this problem to you, what other causes would you recommend he look given his student demographics?” Challenge biases</td>
</tr>
<tr>
<td>May not have a full understanding of the process</td>
<td><strong>Make sure you have some of the right people in the room</strong> Ask people to follow up with fact finding</td>
</tr>
<tr>
<td>May need multiple iterations to determine the problem</td>
<td>Tell people up front that it sometimes takes a couple iterations Remind them of Edison</td>
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</table>
Brainstorming Why

- Have people do an initial data dump on 3x5 cards 1 suspect cause/card
  Working in pairs sometimes helps

- Pool everyone’s cards and sort them into themes for evaluation

- “Park” suggested causes that fall outside the scope of what the group can control
60% of ALL Eng 1302 students do not pass on their first attempt, driving up time to degree, cost of education.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Data Needed to Discredit /Validate the Hypothesis</th>
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<tbody>
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## Data Analysis & Summary

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Finding</th>
<th>Contributing Factor?</th>
<th>Impact</th>
</tr>
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<tr>
<td>It’s the ADJUNCTS!</td>
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<td>It’s the ADVISORS!</td>
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<tr>
<td>Students don’t meet prereq</td>
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<tr>
<td>It’s the 1302 CURRICULUM!</td>
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<tr>
<td>It’s the 1301 CURRICULUM!</td>
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<tr>
<td>A pox on the Administration!</td>
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<td></td>
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<td>GRRRRR Class size is TOO big.</td>
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<td>Pass rate for courses taught by adjuncts ≈ pass rate for T/TT faculty</td>
<td>Probably not</td>
<td>Minor</td>
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<td>It’s the ADVISORS! Students don’t meet prereq</td>
<td>F2011 &lt; Almost 100% met prereqs</td>
<td>No (But have we set the prereq correctly?)</td>
<td></td>
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<tr>
<td>It’s the 1302 CURRICULUM</td>
<td>90% are successful in subsequent writing classes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>It’s the 1301 CURRICULUM</td>
<td>68% of students who got an A in 1301 (prereq) failed/withdrew from 1302</td>
<td>Yes</td>
<td>Significant</td>
</tr>
<tr>
<td>A pox on the Administration. Class size is TOO big</td>
<td>Avg class size was 19 ACTIVE students in 1302 (F2012)</td>
<td>No</td>
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<td>It’s a POLICY issue: Students wait too long after 1301 to take 1302</td>
<td>Average semesters between 1301 and 1302 for D/F/W is .76 Average semesters for A/B/C’s .26 semesters</td>
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Data begets the need for more data

- Before you identify a solution, be sure you understand the scope of the cause

- What is taught in 1301?
- How does 1301 curriculum mesh with 1302?
- How proficient are students at the end of 1301? Is that enough?
- Who is teaching 1301?
- Do any of the 1301 faculty have greater success? What do they do/teach different?
Carefully tie intervention to cause

Not so well-tied:
- Bad 1301 curriculum -> fire the adjuncts!

Better:
- Bad 1301 curriculum ->
  - hire a curriculum specialist to align 1300 to 1301 to 1302
  - establish a community of practice among 1301 faculty to help implement/learn the new approach
  - nurture your adjuncts
  - rotate 1301 and 1302 teaching assignments so faculty understand exactly what students learn over 2 semesters of writing.
What should we consider when identifying a solution?
Last thoughts on solutions:

- Is the solution doable:
  - within the climate/culture?
  - given available resources?
  - given available expertise?
- Is the solution scalable?
- Can the solution be implemented with a defined level of consistently
- Will the solution have broad impact?
  - In other words, is the solution robust enough to move the dial?
Implementation

- Lay out a step by step process with timeline
- Establish regular meetings to review progress
- Identify responsible parties
- Hold people accountable
- Identify/secure needed resources
- Define your measures
- Charge a well organized colleague with monitoring assignments and progress
- Stay focused - don’t dawdle
## Modified Gantt Chart

<table>
<thead>
<tr>
<th>Task</th>
<th>Responsible Party</th>
<th>Completion Deadline</th>
<th>Notes</th>
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Implementation cont.

- Pilot/Review/Implement Broadly
  - OR
- Implement Broadly

To have any measurable impact, the strategy must be broadly and consistently implemented.
A Short Case Study

- In early 2006, a college was interested in increasing the number of first-gen students transitioning directly from high school into college-level courses.
- A bridge program was designed to help students make the transition.
The “What”

Less than 20% of interested Seniors tested college ready in math.
College faculty believed that poor math performance was the result of:

“Students were lazy.”
“HS faculty did not teach well”
“HS curriculum was poorly designed”
“Students didn’t take the placement test seriously.”
“Placement test was not appropriate for high school students.”
What we thought was the “why”

-HS faculty
  -are poor quality
  -are poorly educated
  -don’t assign homework because they are lazy and they know the students won’t do it.
  -dumb down the curriculum.
-HS curriculum is out of step with what we require.
Our solution:

- College faculty would hold professional development for the HS math faculty....
Are you lonely?

Tired of working on your own?
Do you hate making decisions?

HOLD A MEETING!

You can —
• See people
• Show charts
• Feel important
• Point with a stick
• Eat donuts
• Impress your colleagues

All on company time!

MEETINGS

THE PRACTICAL ALTERNATIVE TO WORK
MS  ES  K
The real “why”

- Students were only required to take 3 years of math in HS.
  - They thought that was all they needed
  - Their parents thought that was all they needed – **surely** if they needed more, someone would have said something?
  - So students only took 3 years of math
Captain Hindsight

- Where we got it wrong:
  - Presumed to know HS faculty credentials
  - Presumed we knew HS homework assignments/tests/tests
  - Failed to speak with any HS faculty
  - Set foot on a HS campus
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