

REFERENCE CARD DECK

Data Literacy for Workforce Decision-Making

Nine tools to keep at your desk. One family, one vocabulary, one per stage of the work, from framing a question to telling the story.

How to use them

Hand each card out at the end of its module. Keep the set together afterward. The two canvases are working worksheets; the rest are quick references.

WHAT'S INSIDE

The Shared Language Foundations

the words for evidence, confidence, and action

The Decision Classification Module 2

size the decision before you size the evidence

The UIE Quick Card Module 4

read any chart before you trust it

Reading Red Flags Module 4

eight ways a read goes wrong

The Analytical Moves Module 5

six moves for finding patterns

The Explanation Canvas Module 6

weigh competing explanations by evidence

The Which Chart Card Module 7

the question picks the chart, not the software

The Recommendation Canvas Module 9

turn a finding into a recommendation

The Data Story Arc Module 10

tell the recommendation as a story

The Explanation and Recommendation Canvases are landscape worksheets (blank and worked). Blank copies to write on are in the Participant Workbook.

THE SHARED LANGUAGE

One vocabulary for evidence, confidence, and action.

Turning Data Into Wisdom

Evidence strength

how much the evidence supports the claim

Weak

Mixed

Moderate

Strong

Confidence

how sure we are, given the evidence

Low

Moderate

High

Action

what confidence and consequence justify

Gather

Act narrowly
+ gather

Act

Reject
or defer

One term per concept. Use it everywhere.

THE DECISION CLASSIFICATION

Size the decision before you size the evidence.

Turning Data Into Wisdom

Uncertainty How much we do not yet know.

Earns more evidence when: unknowns are high.

Reversibility Can we undo the decision?

Earns more evidence when: it is a one-way door.

Impact How much rides on getting it right.

Earns more evidence when: the stakes are high.

Frequency One-off, or a recurring call?

Earns more evidence when: it recurs (build a repeatable method).

Stakeholders How many are affected, and must agree.

Earns more evidence when: many must agree.

Complexity How many moving parts interact.

Earns more evidence when: the parts are tightly coupled.

Risk level The cost of being wrong.

Earns more evidence when: failure is costly.

Time horizon How long the consequences last.

Earns more evidence when: they are long-lived.

Size the decision, then size the evidence.

THE UIE QUICK CARD

Read any chart before you trust it.

Turning Data Into Wisdom

U

Understand

See clearly

- What am I looking at?
- Who or what is included, and who is left out?
- Compared to what?
- Is this the full picture, or a slice?

I

Interpret

Make meaning

- What is this actually showing me?
- What else could explain it?
- How certain am I?
- Where does data stop and assumption start?

E

Evaluate

Judge wisely

- Is this trustworthy and valid?
- Is there enough evidence to act?
- What decision does this actually support?
- What am I still assuming?

Slow down before making meaning.

READING RED FLAGS

Eight ways a read goes wrong. Spot them before you believe them.

Turning Data Into Wisdom

No baseline

a number with nothing to compare

Understand

No denominator

a count posing as a rate

Understand

Wrong comparison

measured against the wrong thing

Interpret

Changed definition

the metric quietly redefined

Understand

Incomplete population

the people who matter left out

Understand

Average hides the spread

one mean over many stories

Interpret

Correlation language

"because" doing a cause's job

Interpret

False precision

decimals the data cannot support

Evaluate

Every red flag is a jump the data did not earn.

Catch tag shows the UIE move that flags it.

THE ANALYTICAL MOVES

Six ways to look at the data before you explain it.

Turning Data Into Wisdom

1

Compare before you conclude

"Compared to what?"

Never judge a number without a reference point.

2

Segment before you generalize

"Does the pattern hold in the groups?"

Break the average apart before you trust it.

3

Check the rate, not just the count

"How big is it relative to the whole?"

A count and a rate can tell opposite stories.

4

Separate level from movement

"Is it high, or is it rising?"

Separate what it is now from how much it moved.

5

Look for what moves together

"What else changes when this changes?"

Put two variables side by side and watch.

6

Chase the outlier before you trust the average

"What is different about the exceptions?"

Investigate the odd value before you smooth it away.

Explore before you explain.

THE EXPLANATION CANVAS

Weigh explanations by evidence, not by preference.

OBSERVED PATTERN

Explanation	Evidence for	Evidence against	Missing evidence	Confidence

Best-supported explanation *the one the evidence supports most*

Strongest alternative set aside, and why *name what you considered and rejected*

Next step *act / gather more / reject*

THE EXPLANATION CANVAS

Worked example · Leadership development

OBSERVED PATTERN

Graduates of the leadership programme lead teams that rate 0.4 higher than non-graduates.

Explanation	Evidence for	Evidence against	Missing evidence	Confidence
The programme develops managers	Graduates do lead better-rated teams.	Most of the gap existed before they attended.	A comparable cohort we did not select.	Low
The programme selects strong managers	Graduates rated 3.9 before attending; others 3.6.	Does not explain the small gain after.	Whether volunteers differ in other ways.	High
Better managers volunteer	Attendance was self-nominated throughout.	Two cohorts were manager-assigned.	Selection records for those cohorts.	Moderate
Raters know who attended	Ratings are done by people who see the roster.	No evidence either way yet.	Whether raters were blind to attendance.	Untested

Best-supported explanation *the one the evidence supports most*

Selection, at moderate confidence. The programme picks strong managers more than it produces them.

Strongest alternative set aside, and why *name what you considered and rejected*

That the programme develops managers. It is the answer everyone wanted, and the prior ratings eliminate it.

Next step *act / gather more / reject*

Gather: run one cohort with managers assigned rather than volunteering.

WHICH CHART?

Start with the question, not the software.

Turning Data Into Wisdom



Comparison *“How do they rank or differ?”*

Bar, sorted bar, dumbbell, grouped bar



Trend over time *“How is it changing?”*

Line, slope, area



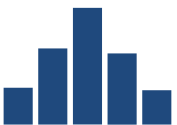
Part-to-whole *“What is it made of?”*

100% stacked bar, sorted share, pie (sparingly)



Relationship *“Do they move together?”*

Scatter, bubble



Distribution *“What is the average hiding?”*

Histogram, box plot, frequency bar



Flow through a process *“Where does it drop off or detour?”*

Funnel, step-rate, Sankey

One rule to remember: bars need a true zero; lines and dots do not.

Charts by purpose, not software.

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QUESTION

EVIDENCE

READ

EXPLORE

EXPLAIN

VISUALIZE

RECOMMEND

TELL

THE RECOMMENDATION CANVAS

Turn the finding into a decision someone can act on.

Situation *what is happening*

Tension *why it cannot wait*

Evidence *what supports it*

Confidence

Low / Moderate / High

Recommendation *what to do*

If we act *the upside*

If we do not *the cost of waiting*

Assumptions *what must be true for it to work*

Limitations *what the analysis cannot establish*

A finding is what is true. A recommendation is what to do. • Turning Data Into Wisdom

THE RECOMMENDATION CANVAS

Worked example · Leadership development

Situation *what is happening*

We have run the leadership programme for two years, and expansion to all mid-level managers is on the table for next year.

Tension *why it cannot wait*

The budget decision lands this quarter, and the case for expanding is weaker than the headline number suggests.

Evidence *what supports it*

Graduates' teams rate 4.1 against 3.7. But graduates rated 3.9 before they attended, so most of the gap predates the programme.

Confidence

Low to moderate

Recommendation *what to do*

Do not expand yet. Run one cohort with managers assigned rather than volunteering, and compare against a matched group.

If we act *the upside*

Two quarters and a fraction of the expansion cost tells us whether the programme adds what we think it does.

If we do not *the cost of waiting*

We scale a selection effect and call it development, at full budget, with no way to tell later whether it worked.

Assumptions *what must be true for it to work*

That an assigned cohort is comparable to a volunteer one, and that two quarters is long enough for an effect to show.

Limitations *what the analysis cannot establish*

Performance ratings do not capture what the programme may add that a rating never measures.

A finding is what is true. A recommendation is what to do. · Turning Data Into Wisdom

THE DATA STORY ARC

Turn a recommendation into a story that moves people.

Turning Data Into Wisdom

Start here: Purpose? Audience? Outcome?

Then FOCUS: Focus · Outcome-relevance · Critical data · Usefulness · Simplicity

THE SEVEN STAGES

- | | | |
|---|------------|--|
| 1 | Hook | <i>grab attention with the finding</i> |
| 2 | Context | <i>frame why it matters</i> |
| 3 | Process | <i>the rigor, only if they need it</i> |
| 4 | Insight | <i>the so what</i> |
| 5 | Impact | <i>why it matters to them</i> |
| 6 | Resolution | <i>what to do (the recommendation)</i> |
| 7 | Future | <i>what is possible ahead</i> |

THREE WAYS TO TELL IT

- | | | |
|------------------|-----------------------------|-----------------------------------|
| Standard | all seven, in order | when: teaching, rollout |
| Inverted | resolution first | when: busy or expert rooms |
| Truncated | insight, impact, resolution | when: a tight update |

A story persuades, but it stays bound to the evidence.