

Discovery, Defined

SESSION 04
09.02.26

What design discovery is, how to frame a problem, and where your brief starts.

Workhorse Collective

ART 418 · Fall 2026

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Meets Mon + Wed, 1:30 to 2:50
Today Session 04 · 09.02.2026

Today: what discovery is, how to frame a problem, and then you start your own brief.

01 · The mindset

What Brown means by discovery, what it is not, the four activities it is made of, and the ways it goes wrong. Chapter 1, the reading for today.

02 · Frame the problem

Three kinds of assertion, what a problem statement is and is not, the framing canvas, five whys, four contexts, how to gather and how to process. Chapter 2. Your audience is due in a week and your problem statement in twelve days.

04 · Your discovery starts

Thirty minutes. You open the project brief from the template, write your first assertions, name the gaps, and pick the three questions you will answer first.

The Mindset

"Discovery is an attitude."

PRACTICAL DESIGN DISCOVERY, INTRODUCTION. ITALICS IN THE ORIGINAL.

DB

Dan Brown

American designer. Co-founded the design firm EightShapes.

Not a process, not an artifact, not a phase, not a methodology, not a school of thought.

You are learning: about users, about the business, about the technology.

Brown opens with three claims about discovery

01

It frames the problem and the solution

"You can't truly understand a problem until you spend some time solving it." You try a few ideas to move forward, and that is allowed.

For you

The pitch on Sep 21 carries ideas. That is not cheating on the research. It is how the research gets checked.

02

It happens throughout

Nobody reaches a moment and says "I know everything, let the designing begin." Questions keep arriving. Assumptions get discarded.

For you

Your brief keeps changing all semester. Each version you turn in on Blackboard is a step, not the final answer.

03

It is a mindset, not a phase

Time-boxing learning makes it predictable and cheap, and learning does not work on a timetable. Your brain makes the connection on its own schedule.

For you

The calendar has dates on it anyway. Brown's answer is to plan, then adjust. Chapter 4.

Learning about the business, the technology, and the users. Not yet deciding about layout.

Not strategy

Strategy addresses the problem the business has. Discovery addresses the problem the design has to solve. They overlap, and they are not the same job.

Not a methodology

"A compromise, a way to squeeze what we know about creativity into what we need in business." Fits inside any process you already run.

Not execution

Execution implements what discovery established. The mindset shift is from learning to deciding.

Not requirements

"More than collecting requirements for all to ignore."
Requirements read in context stop being a laundry list.

Discovery is four activities, in a loop

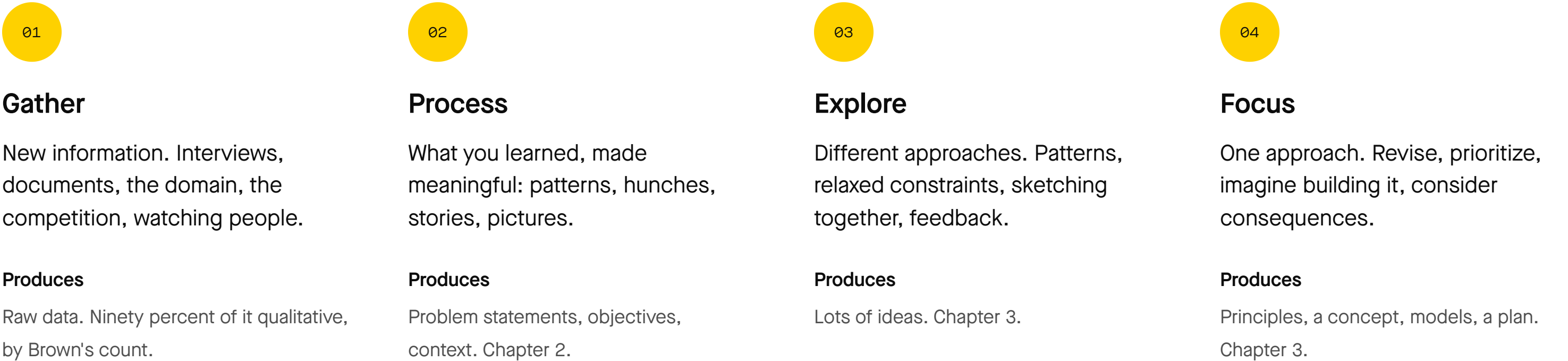


FIG 1.2 IN PRACTICAL DESIGN DISCOVERY. "NOT LINEAR, BUT INTERCONNECTED."

Six ways discovery goes wrong

01

Being dogmatic about process

Running the method because it is the method. The mindset fits any process; the process is not the point.

02

Regurgitating requirements

Writing down what you were told without the context that would make it mean something.

03

Researching without exploring

The tension between understanding the problem and trying to solve it is where the vision comes from. Skip the second half and you get a report.

04

Thinking of it as "done"

"Discovery isn't ever 'done,' but then again, neither is your website."

05

Jumping into execution

You know the users, it is a simple product, there are no stakeholders. Every team has said this. It is how discovery gets skipped.

06

Separating it from designers

Handing research to someone else and receiving a document. "No one is dispensable here."

What discovery is for

01

Build a diverse team

"Healthy conflict is crucial to good design."
More people, more ways of seeing the problem.

02

Focus on practical results

"If your work isn't leading to better tools, it's time to stop discovery." The guard against one more interview.

03

Build a shared language

The team finds out it means three things by "template." Discovery is where that gets settled.

04

Find new approaches

Confidence that you chose the right one, because you looked at others.

05

Establish a product definition

Start with a purpose, arrive at the product's "most basic definition, something the whole team buys into."

06

Encourage consideration

"Discovery gives you a direction, not a defined path." You can change your mind, and the more you learn the less criticism stings.

Frame the Problem

"By not drawing a clear and compelling problem, you are cheating your team out of an incredible unifying and driving energy."

IN AN INTERVIEW WITH LUKE WROBLEWSKI. BROWN'S EPIGRAPH FOR CHAPTER 2.

TC

Tom Chi

Product designer. Worked on early projects at Google X.

Brown's own search-engine story: the demons already existed as complaints. "You can't control complaints, but you can use them to frame a problem."

Discovery produces assertions



Problem statement

Tells the team what needs to be fixed.
"Association members were frustrated with the search results because they were out of date and irrelevant."

Its job

A test for every idea afterward: "Does my concept solve the problem?"



Project objective

Summarizes what you hope to accomplish. "A search experience that incorporates modern search features and sets the stage for personalized results."

Its job

What you will deliver, not what problem you will solve.
Kept separate on purpose.



Contextual statement

Background about users, business, technology.
"Our users are usually looking for a job search or an industry event. The site search uses Google Search Appliance."

Its job

Everything surrounding the product that will bear on the design.

Four ways to get to a problem statement



Pretend to be a reporter

Summarize the situation for a broad audience. Introduce the project and the core conflict as quickly as possible. Focus on the users and what they are up against.

Gives you

"Our project should fix this."



Ask why, five times

The chain in the book runs from "the search engine needs to be fixed" down to the organization's revenue models. The whys together are the statement.

Gives you

A problem that may not be a single sentence. The book allows that.



State it as a hypothesis

An assumption about the product that you need to test. The crucial parts are what would prove it wrong.

Gives you

A statement that already knows what research it needs.



Draw a problem picture

A flowchart of the broken process. A sitemap with the weak areas marked. A mental model showing the gap between needs and content.

Gives you

Something the team can react to. "Get something down on paper."

What a problem statement is not.

A solution in disguise

"People need an app that..." forecloses the whole first diamond before it opens.

A topic

"Sustainability in fashion." That names a subject. Nothing in it is in anyone's way.

A complaint

"Parking here is terrible." No one specific is in it, so nothing specific can be designed for.

The classic reframe

The elevator was never slow. The wait felt long. The answer was mirrors. Reframes come from knowing what they think.

The problem framing canvas

WHO Who is experiencing this problem? How do we know that they are?	WHAT What is the nature of the problem? What signs point to there being one?
WHY Why is it worth solving? What does it cost the people who have it?	WHERE In what circumstances does it occur? In what circumstances does it not?

Four questions, arranged so two people can work on them at once. Fill all four, then write **one statement** that carries all four. That statement is your September 14 assignment.

Five whys

PROBLEM	Students eat badly.
WHY?	They eat whatever is fastest between classes.
WHY?	They have fifteen minutes, and the dining hall is a ten minute walk.
WHY?	Their schedule was built around which rooms were free, not around their day.
WHY?	Registration optimizes for filling classrooms.
WHY?	Nobody owns the student's day. Every office owns one piece of it.

A habit at the top, an org chart at the bottom. **Every rung is a problem you could frame**, and each one lets you design something else. **Stop where you can still reach the people to ask.**

You will meet this form again under other names.

Point of view and how might we

Stanford d.school. What most design teams open a project with.

The job story

Jobs to be done. "When [situation], I want to [motivation], so I can [outcome]." Product teams live in this one.

Working backwards

Amazon. Write the press release and the customer FAQ before anyone builds anything. If the release is boring, the frame is wrong.

The problem statement

Brown, chapter 2, and the version this course grades against: **[users] must have [need] to achieve [objective].**

Project objectives, five things to be specific about



Contextual statements, four contexts

BUSINESS Domain, mission, objectives, markets, brand, culture, operating processes. "Don't be the expert." Pick one or two aspects. Capture only what will affect the design.	TECHNOLOGY Data, content structure, silos, integration with the rest of the suite. "Don't be afraid to play dumb." The technologists on the team explain it; you write down the constraint.
USERS Expectations, cognitive constraints, the scope of everything they do around the activity, what they believe about the industry. "You don't have to use personas." User data is a design tool, so keep it in a form you will reuse.	CONTENT Style, voice and tone; structure and relationships; scale and quality. "Look beyond the quantitative." What the content is like, not just how much there is.

For a product with no market, the third box is your audience assignment and the first box is mostly empty. **The empty box is not a failure. It is your research question.**

How to gather, without interviews

01

Domain research

Enough of the field's jargon and basic concepts to read the rest. What the product is, what category it would sit in, who else is in that category.

For your product

The paper, the patent, the grant abstract, the README, the press it got. Brown: "draw pictures" to get your head around it.

02

Existing assets

Everything the makers already wrote: documentation, a pitch deck, a website, a demo, a talk. Compare what is claimed to what is built.

For your product

These are your stakeholder interview, on paper. "Take nothing for granted": every noun they use is a question.

03

Competitors and comparables

Products that offer similar value set the tacit standard for what users expect. Look at what they prioritize, their navigation, their language.

For your product

Whatever your audience uses today instead. Its reviews and forum threads are your users talking without being asked.

04

The current product

Use it, or watch the demo. Ask the purpose of every screen. Look for what was compromised for expediency.

For your product

If there is a demo, run it. If there is not, read the documentation as if it were the product.

Just enough: every assumption is a research question you have not asked yet



What research is

Hall: systematic inquiry. Asking a question you do not already know the answer to, in a way someone else could repeat. Not a focus group, not a survey you wrote to agree with you.

Hall, ch. 1 and 2

"Just enough" is a budget: enough to make the next decision, and no more.



Four kinds

Generative: what problem exists? Descriptive: what is it like, for whom? Evaluative: does this design work? Causal: why did the number move?

September is

Generative and descriptive. Evaluative and causal research are not part of this course.



The plan, in five lines

The problem. The research questions. The approach, which for you is one of the four research activities. The sources, named. The date.

Hall, ch. 3

A research question is not an interview question. "Who buys this?" is research. "Would you buy this?" is a question nobody answers honestly.



Assumptions first

Write down what you believe about the product and the audience. Every belief without a source is an assumption. Rank them by how bad it is if you are wrong.

In BRIEF.md

Every question mark in section 2 is an assumption. Section 4 turns the three worst into questions, each with a source and a date. That is the workshop's step four.

The competitive audit, and the number with its context

01

Who the competition is

Whatever your audience uses today instead of your product. A spreadsheet. A YouTube channel. A senior colleague. Doing nothing. Hall's competition is the alternative, not the company in the same category.

Hall, ch. 6

The workaround is the competitor. If you cannot name it, you have not found the audience yet.

02

What to audit

What they say about themselves: the positioning, the price, the promise. What users say about them: reviews, threads, the complaints that repeat. The gap between the two is your finding.

Not for copying

You are looking for the standard the audience already expects, and the thing nobody is doing. Understand what they set, then differ from it on purpose.

03

A number tells you what

Never why. A count, a price, a share, a rank. Quantitative research describes the size of a thing. The reason lives in the reviews and the threads, which is qualitative.

Hall, ch. 9

A count without its denominator is a decoration. "Thirty thousand" of what, out of how many, in what year?

04

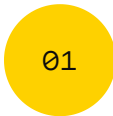
How to cite one

The source, the year, the population it counted, and what it does not cover. The AIGA census counts people who answered the AIGA census. Say so on the slide.

On Sep 14 and Sep 21

Every number in brackets points at a source in the list. Pitch slide 8, supporting details, is this slide done once for your product.

What you are not doing this month, and why chapter 5 is still assigned



The guide has four parts

The study's goal in a line. The factual questions that place the answers. Two warm-ups. Then the questions that are the point. A checklist, not a script.

Hall, ch. 5

Open questions that start a story. "Tell me about the groups you work with," not "do you talk to marketing often?"



The question that pays

"What kinds of work-arounds do you use?" A habit built around an obstacle is a problem nobody has framed yet, and the person describing it does not know they are describing a product.

Hall, ch. 4

From her stakeholder set. It works on a user, a client and a maker. It is the one to memorize.



Why not now

Recruiting, scheduling and consent take longer than the twelve days you have. A bad interview done in a hurry produces a confident wrong answer, which is worse than a marked guess.

This month

Desk research only. The reviews and the forum threads are the users talking without being asked; read them with the guide's questions in mind.



Why read it anyway

A professional project would interview people, and this is the guide for it. Chapter 5 is read for Sep 21, beside Monteiro.

The templates sheet

Her four parts, her three questions, and her museum question set are on the class page, in her words.

How to process



Find the patterns

One observation per line in a spreadsheet, then move them into groups. Let go of the groups you walked in with. Four hundred index cards split six ways, in the book's healthcare example.

Watch for

Segments you did not expect. Career confidence, not high school versus college.



Capture hunches

Write impressions down as they come, with the evidence, in a shared document the book calls the project whiteboard. Review them with the team.

Watch for

"Learn to let go." A hunch the evidence stops supporting gets deleted.



Tell a story

A day-in-the-life with a dramatic moment, written from the user's side, with real quotes from the research. Or a scenario: a task with a beginning, middle and end.

Watch for

Writing it from the product's point of view. He uses these instead of personas.



Visualize

Sticky notes, a collage, a timeline, a two-by-two, a bubble diagram. The search project in chapter 2 became a chemistry equation on a poster.

Watch for

Working everything in. "Too many concepts won't serve to move the project forward."

Frame the problem: twelve days.

Sep 9 · The audience

Three contextual statements about users. Who they are, what they use today instead, what that costs them. Which one you lean to. Gathered, not guessed: every paragraph names what you read.

Read for Sep 9

The rest of Brown chapter 2: problem statements and project objectives. Hall chapters 6 and 9, competitive research and numbers. Davis chapter 10. Then for Sep 21: Monteiro chapters 1 and 2, and Hall chapter 5 on interviews.

Sep 14 · The problem statement

One page, one audience, the four boxes filled, compressed to one statement from their side. Every claim names a source. Run it against the two traps and the six.

Between now and then

Gather and process, in the loop, from published sources. The paper or the patent, the makers' own documents, the workaround and its reviews, hunches with evidence in the brief.

Discovery is September.

Frame · Sep 2 to 14

Today the brief opens. Sep 9 the audience, three contextual statements about users. Sep 14 the problem statement, every claim sourced.

Document · Sep 23 to 30

Definition pressure-tests the strategy. The creative brief is written in class on the 30th and the brand answers to it for the rest of the semester.

Direction · Sep 14 to 21

Two studio days, then the pitch, recorded: Brown's discovery document in five sections, with a concept and principles in the middle of it.

Then · Oct to Dec

Explorations, the identity, the rules, the brand book. Brown's "execution." The mindset does not switch off; the deciding starts.

Your Discovery Starts

THIRTY MINUTES, LAPTOPS OPEN. YOU START THE SHARED FILE BROWN TELLS EVERY TEAM TO KEEP.

WORKHORSE

Three passes

01

Worlds

Underline every world your statement names: places you've worked, communities you're in, things you do that most people don't.

Why

You know these places. You see problems an outsider can't, and you can reach people there to ask what they think.

02

Friction

In each world, list what's broken, slow, embarrassing, expensive, or worked around.

Why

Workarounds are the best signal. A habit people built around an obstacle is a problem nobody has stated yet.

03

Match

Hold your friction list against the product list: real technologies with no market. Look for where the two meet.

Why

A technology with no audience, meeting a world where you already know the people, is a project you can carry for a semester.



Open the brief

A document called BRIEF.md, from the template on the class page, with the five headings on the next slide. Brown's shared cloud document. It is the project whiteboard and it never gets finished.

5 minutes

Solo. Save it empty first, so it exists.



Assert, badly

Fill the four contexts with what you know right now about your product and your leaning audience. A problem statement, version zero. Mark every line you guessed with a question mark.

12 minutes

Solo. Thin boxes are the output, not the failure.



Swap and press

Your partner reads your brief and presses on it the way Brown presses a stakeholder: picks any noun you wrote and asks "where did you read that?" Every line without an answer gets a question mark.

5 minutes each way

The reader asks. The writer does not defend.



Three questions

From the question marks, pick the three you must answer to set a direction. For each: which of the four research activities, which document or product, by when. Anything not answerable by Sep 12 is not in the problem statement.

3 minutes

Write them into the brief. That is the research plan.

BRIEF.md, five headings

1 · ASSERTIONS Problem statement, version 0. Project objective, version 0. Both dated. Both expected to be wrong. Later versions go above, not over.	2 · CONTEXT Business, technology, users, content. A few lines each. Question mark on every line you have not checked. The users section becomes Sep 9.
3 · HUNCHES Impressions as they arrive, dated, each with the evidence beside it. Deleted when the evidence stops supporting them. Learn to let go.	4 · QUESTIONS, AND 5 · LOG OF WHAT THE MACHINE DID The three questions, each with a research activity, a source, and a date. Then one line per session: what you asked the model, what it gave you, what you kept.

Everything you turn in this month is a section of this file, revised. **The audience is section 2. The problem statement is section 1. The pitch reads the whole thing aloud.**

Read one of your three questions, and how you will answer it.

Say

The question as written. Which research activity answers it.
What you will read or run. The date.

We listen for

A source you could actually open tonight.

We listen for

A question that is really a solution.

We listen for

The empty context box. Saying it out loud is the most useful thing that happens today.

The work between now and Wednesday.

Tonight

BRIEF.md saved with the five headings, your version-zero assertions, and three questions with dates. One line in section 5 if the machine did anything today.

Wednesday · Sep 9

The audience: three contextual statements about users, and which one you lean to. Read the rest of Brown chapter 2, Hall chapters 6 and 9, and Davis chapter 10, the eleven questions.

By Friday

Question one answered from published sources, with the source named in the brief.

Sep 14, then Sep 21

The problem statement, one page, every claim sourced. Then the pitch on Sep 21: Brown's five sections, recorded on video, about ten minutes.

Close

"There is no design without discovery."

Dan Brown, the first line of the book's conclusion. See you
Wednesday.