How to create Accessible Experiences that inspire.

Accessing Higher Ground – Pre-Conference Workshop (3hrs) – Denver, November 6

Presented by Marcelo Paiva and Mark Zebley

RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA

Workshop Agenda

1 **About Rhonda Weiss Center**

10 min – About us and our project

2 **WCAG + Section 508 + Title II**

15 min – Compliance vs. People Needs

3 **WCAG in plain language**

15 min - WCAG through the words of users with disabilities.

4 **Is your favorite site accessible?**

10 min – Activity: auditing accessibility

BREAK - 10MIN

5 **Universal Design**

10 min - Training, knowledge sharing, start a community

6 **Inclusive Design**

10 min - Office hours, design review, templates

7 **The Inclusive Design Process**

20 min - Content-first approach

8 **User Journey + Priority Guides**

10 min – Activity: Job search priority guides (Figma)

BREAK - 10MIN

9 **Intent Framing + Chat GPT**

20 min – Activity: Using AI to create compelling content

10 **Accessible Rapid Prototyping**

20 min – Activity: Prototyping with Accessibility in mind (No Latin)

11 **Users Testing with Accessibility in mind**

10 min – Best practices

12 **Questions and Answers**

10 min – Resource Sharing and Discussion

About Us

The Rhonda Weiss Center and your facilitators

RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA

The Rhonda Weiss Center

- The Rhonda Weiss Center for **Accessible Individuals with Disabilities Education Act (IDEA)** Data assists states in meeting their data demands.

- Create a free data reporting tool that allows States to publish IDEA data in ways that are accessible, usable, and manipulatable by persons with disabilities.

- Providing Technical Assistance on making IDEA data reporting and publications accessible to persons with disabilities.

Facilitators

Mark Zebley,
UX Design &
Development

Marcelo Paiva
Inclusive Design and
Accessibility

Our Positionality: Who we really are.

Mark Zebley

I am a Northwest Arkansas native who explored various creative pursuits, from music to design to technology, before finding my passion for UX development.

I'm all about crafting digital experiences that are not just functional but genuinely delightful and intuitive. I firmly believe that accessibility isn't about simplification; it's about expanding our reach and making digital experiences inclusive and inspiring for everyone.

Marcelo Paiva

I migrated to the US from Rio de Janeiro, Brazil in 1992, evolving with the digital design realm from CAD drafter to leading User Experience design teams.

Being a proud American yet often seen as an outsider, I've grappled with exclusion. This fuels my advocacy for inclusive design in the UX community, striving to make design accessible for all, reflecting my journey from an immigrant to a catalyst for inclusivity in design.

It's about people, not compliance

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It's about people, not compliance.

Typical Barriers Based on Unconscious Bias

Common Barriers to Accessibility

- **Assumptions about disability types**

- **Inadequate communication or context**

- **Unintentional exclusion**
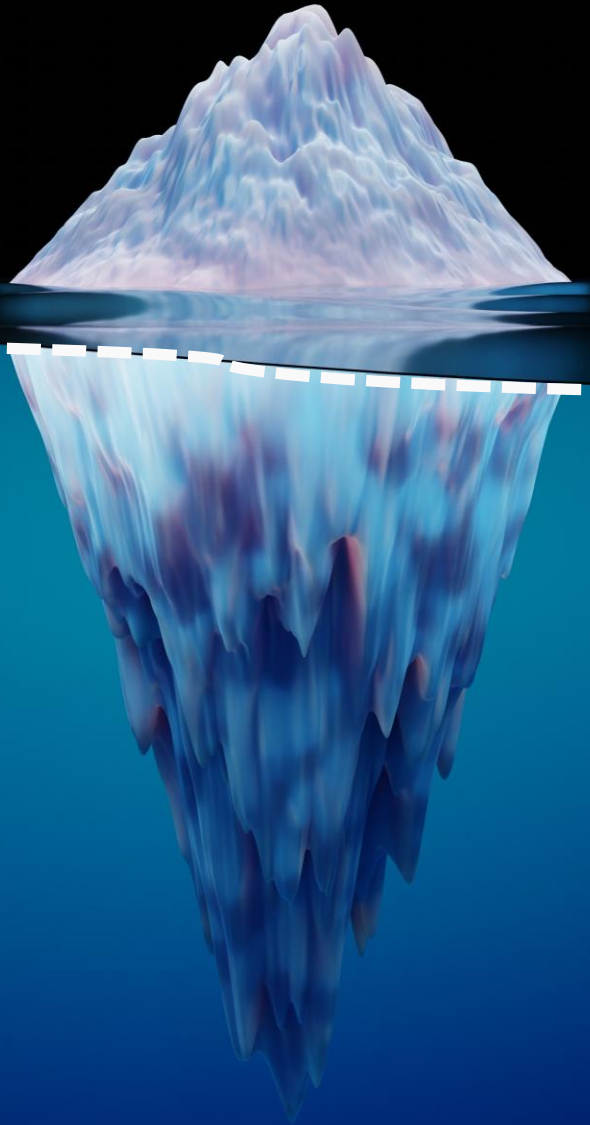
- **Unsolicited assistance**

The failure to provide accessible content is a form of **ableism.**

Ableism – is a set of assumptions and practices promoting the differential or unequal treatment of people because of actual or presumed body or mind difference.

Explicit Bias

Line of consciousness

Implicit Bias
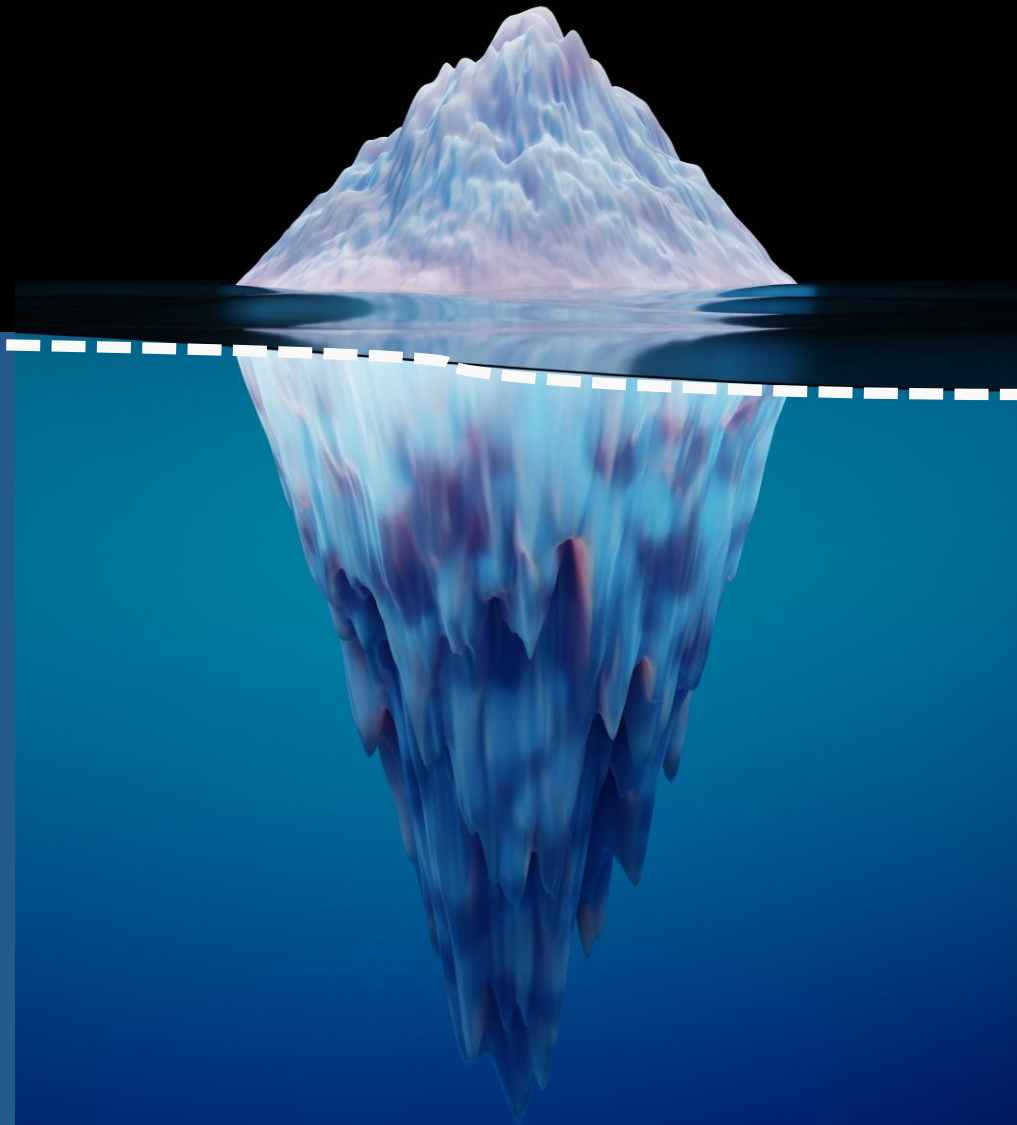## ableism

Photo by SIMON LEE on Unsplash

Explicit Bias
Attitudes and beliefs that we have about a person or group on a conscious level. We are fully aware of these, so they can be self-reported.

Line of consciousness

Implicit Bias
Unconscious attitudes that lie below the surface but may influence our behaviors.

Photo by SIMON LEE on Unsplash

Implicit bias example:

Data Visualizations

How we want users to visualize the data.

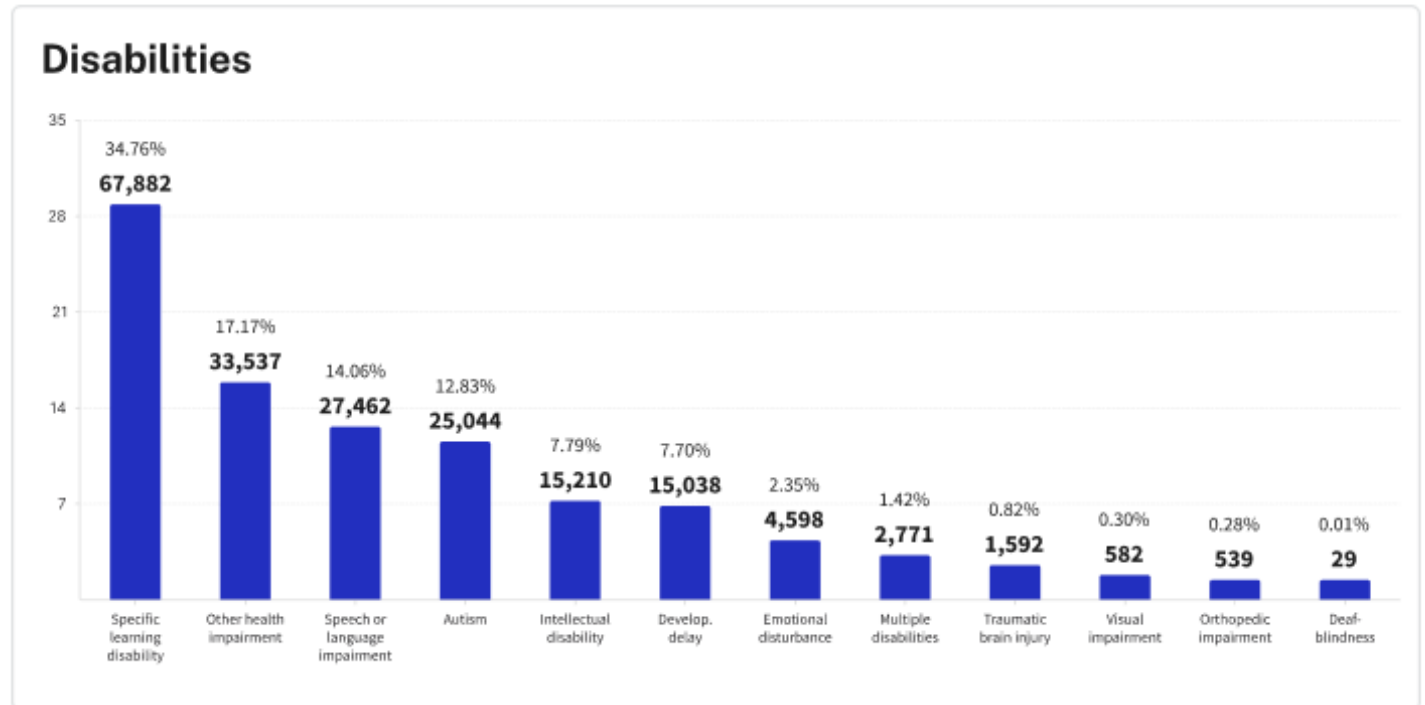Implicit bias example:

~~Data Visualizations~~

~~How we want users to visualize the data.~~

Data Representation

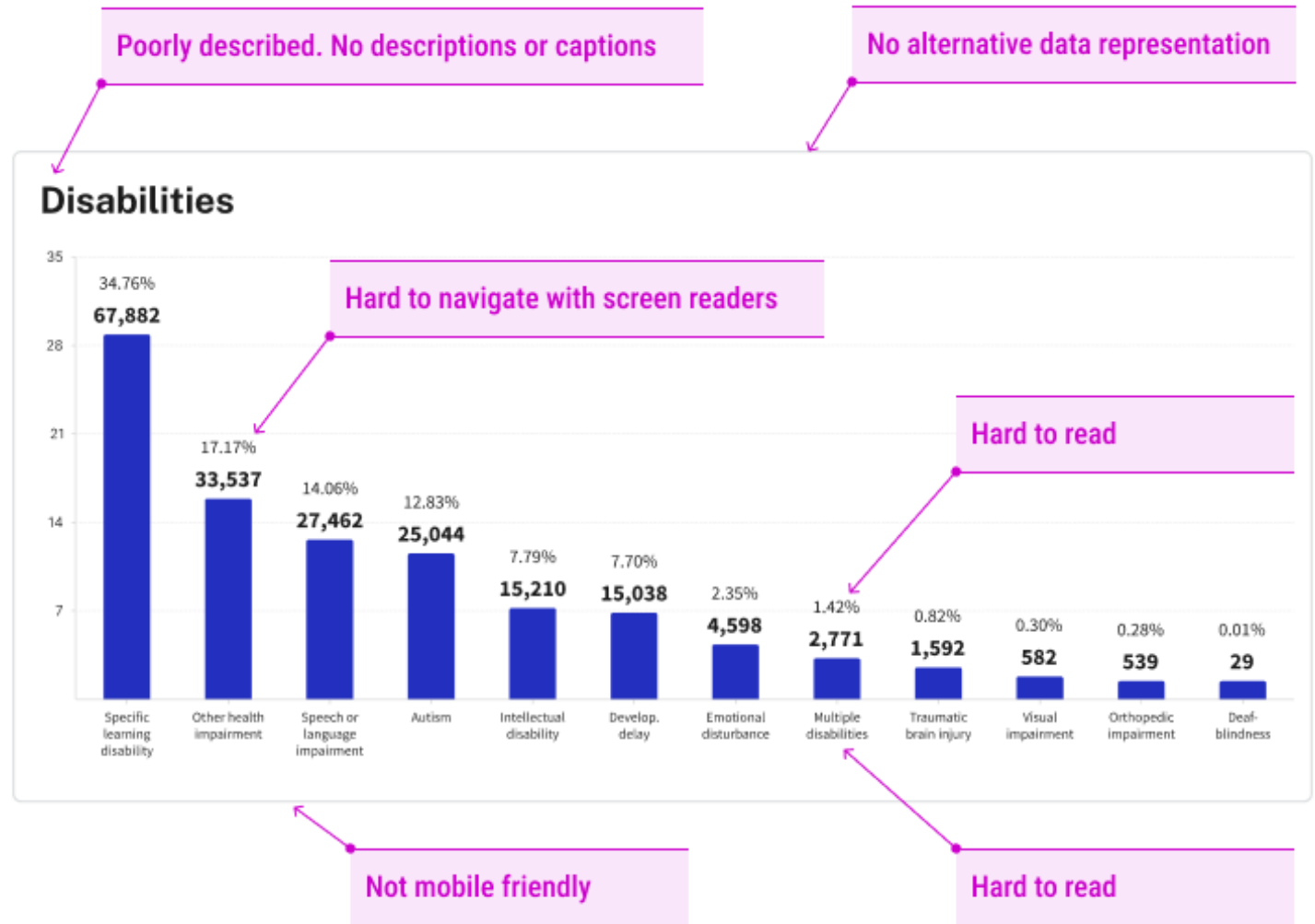**How the data is represented to all users.**

Data Visualization as we know creates barriers

- Data visualization is the default approach for most content creators.

- Unfortunately, it reflects an implicit bias towards sighted users.

Disabilities

| Category	Percentage	Count
Specific learning disability	34.76%	67,882
Other health impairment	17.17%	33,537
Speech or language impairment	14.06%	27,462
Autism	12.83%	25,044
Intellectual disability	7.79%	15,210
Develop. delay	7.70%	15,038
Emotional disturbance	2.35%	4,598
Multiple disabilities	1.42%	2,771
Traumatic brain injury	0.82%	1,592
Visual impairment	0.30%	582
Orthopedic impairment	0.28%	539
Deaf-blindness	0.01%	29

Data Visualization unconscious bias

- The name itself carries the "**visual**" term.
- The data is not properly represented to all users.
- Making visualizations accessible is difficult.

Poorly described. No descriptions or captions

No alternative data representation

Hard to navigate with screen readers

Hard to read

Not mobile friendly

Hard to read

Disabilities

34.76%		
67,882		

- 34.76% — 67,882 — Specific learning disability
- 17.17% — 33,537 — Other health impairment
- 14.06% — 27,462 — Speech or language impairment
- 12.83% — 25,044 — Autism
- 7.79% — 15,210 — Intellectual disability
- 7.70% — 15,038 — Develop. delay
- 2.35% — 4,598 — Emotional disturbance
- 1.42% — 2,771 — Multiple disabilities
- 0.82% — 1,592 — Traumatic brain injury
- 0.30% — 582 — Visual impairment
- 0.28% — 539 — Orthopedic impairment
- 0.01% — 29 — Deaf-blindness

Data Visualization needs a reset

- It's about time we think about people with disabilities when creating reports.

- A proper term is needed.
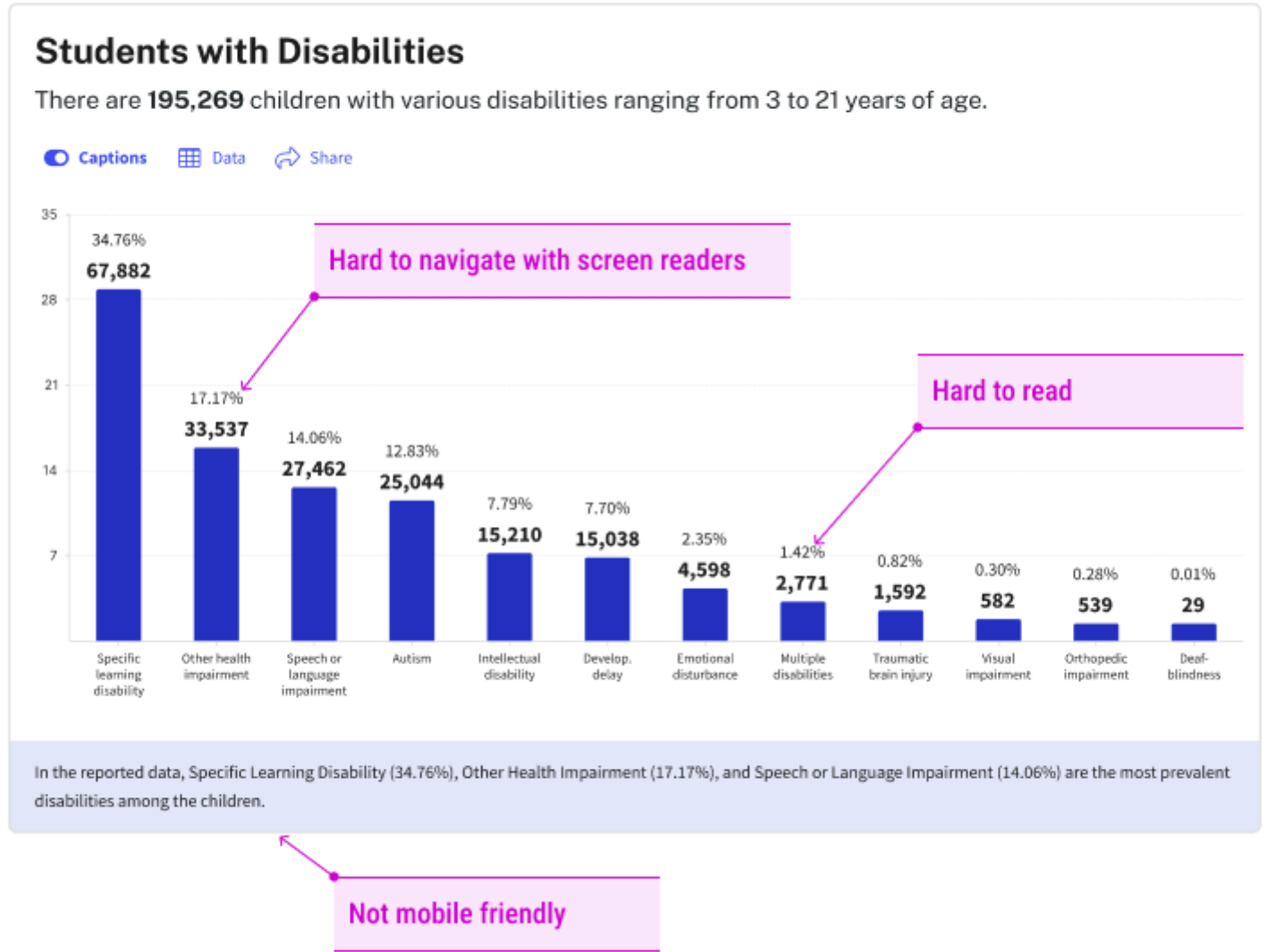
Data Representation
(for all users)

- Data representation should consider users with multiple disabilities or access limitations.

- Including those with data bandwidth limitations or intermittent connectivity.

Students with Disabilities

There are **195,269** children with various disabilities ranging from 3 to 21 years of age.

◎ Captions   ⊞ Data   ↱ Share

Specific learning disability

34.76%
67,882

Other health impairment

17.17%
33,537

Speech or language impairment

14.06%

Data Representation (multi-modal)

- Data representation considers users with multiple disabilities.
- Learning and cognitive challenges.
- Visual impairment and blindness.

Mobile friendly - 1 column layout

Students with Disabilities

There are **195,269** children with various disabilities ranging from 3 to 21 years of age.

Quick summary

◎ Captions　　⊞ Data　　↱ Share

Easier to read labels

Specific learning disability

34.76%
67,882

Other health impairment

17.17%
33,537

Focusable elements

Speech or language impairment

14.06%

Linear and scrollable

Data Representation
(extended)

- Captions and audio transcription features provide an important element to non-visual users.

- Including those that find hard to read complex data.

Students with Disabilities

There are **195,269** children with various disabilities ranging from 3 to 21 years of age.

Captions   Data   Share

Descriptive summary of the data

▶ Read ← *Auditory support*

In the reported data, Specific Learning Disability (34.76%), Other Health Impairment (17.17%), and Speech or Language Impairment (14.06%) are the most prevalent disabilities among the children.

Specific learning disability

34.76%
67,882

Data Representation
(visual representation)

- Visual representation is still very important,

- But should not be the only way to represent data,

- Nor be the most important.

Students with Disabilities

There are **195,269** children with various disabilities ranging from 3 to 21 years of age.

Captions   Data   Share

▶ Read

In the reported data, Specific Learning Disability (34.76%), Other Health Impairment (17.17%), and Speech or Language Impairment (14.06%) are the most prevalent disabilities among the children.

Specific learning disability — 34.76% / 67,882

Other health impairment — 17.17% / 33,537

Speech or language impairment — 14.06% / 27,462

Autism — 12.83% / 25,044

Intellectual disability — 7.79% / 15,210

Developmental delay — 7.70% / 15,038

Emotional disturbance — 2.35% / 4,598

Race and ethnicities

Distribution of children with disabilities by race and ethnicity, ages 3-21.

Captions   Data   Share

White — 43.60% / 85,134

Black or African American — 29.79% / 58,162

Hispanic or Latino — 17.96% / 35,079

Two or more races — 5.51% / 10,758

Asia — 1.71% / 3,339

American Indian or Alaskan Native — 1.32% / 2,583
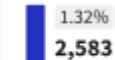
Native Hawaiian or other Pacific Islander — 0.11% / 214

It's about people, not compliance.

Web Content Accessibility Guidelines (WCAG)

Web Content Accessibility Principles and Guidelines

4 Principles

1. Perceivable
interface components need to be presentable to a user in a way that they can discern regardless of which senses they do or do not have use of.

2. Operable
user interface and navigation components need to be able to be used by everyone, including people who do not use a standard keyboard and mouse.

3. Understandable
people must be able to understand information in your web content, how to find the information they want, and how to use any tools or features offered.

4. Robust
can be accessed on a variety devices, including assistive technologies, and remain accessible as technology and user agents evolve.

13 Guidelines

1.1 Text Alternatives
1.2 Time-Based Media
1.3 Adaptable
1.4 Distinguishable

2.1 Keyboard Accessible
2.2 Enough Time
2.3 Seizures and Physical Reactions
2.4 Navigable
2.5 Input Modalities

3.1 Readable
3.2 Predictable
3.3 Input Assistance

4.1 Compatible

WCAG – Levels of Conformance

Three Levels of Conformance	Understanding	You're addressing Accessibility
A	**Essential** If this isn't met, assistive technology may not be able to read, understand, or fully operate the page or view.	After QA
AA	**Ideal Support (Section 508)** Required for multiple government and public body websites.	Before Development
AAA	**Specialized Support** This is typically reserved for parts of websites and web apps that serve a specialized audience.	Before Design

It's about people, not compliance.

The Rehabilitation Act
Section 508
Federal Agencies

The Rehabilitation Act (1973)

Prohibits discrimination on the basis of disability in federal programs or programs receiving federal aid or employment.

Section 508 Amendment – 1998 refresh

Requires federal agencies to make their electronic and information technology services accessible to people with disabilities.

Section 508 Amendment – 2017 refresh

Includes electronic documents and adopts the W3C's Web Content Accessibility Guidelines WCAG 2.0 – AA level of conformance.

It's about people, not compliance.

Americans with Disabilities Act
State and Local Governments

Americans with Disabilities Act – 1990

Americans with Disabilities Act (ADA) prohibits discrimination based on disability by public entities, regardless of whether they receive federal financial assistance.

Americans with Disabilities Act – Title II and Title III

The Americans with Disabilities Act applies to **state and local governments (Title II)** and businesses that are open to the public (Title III).

What are the newly proposed regulations under Title II of the ADA?

The new Title II of ADA to adopt WCAG 2.1 AA

The web accessibility standards that are being proposed apply to state, local, and district government entities' websites, mobile apps, and digital documents.

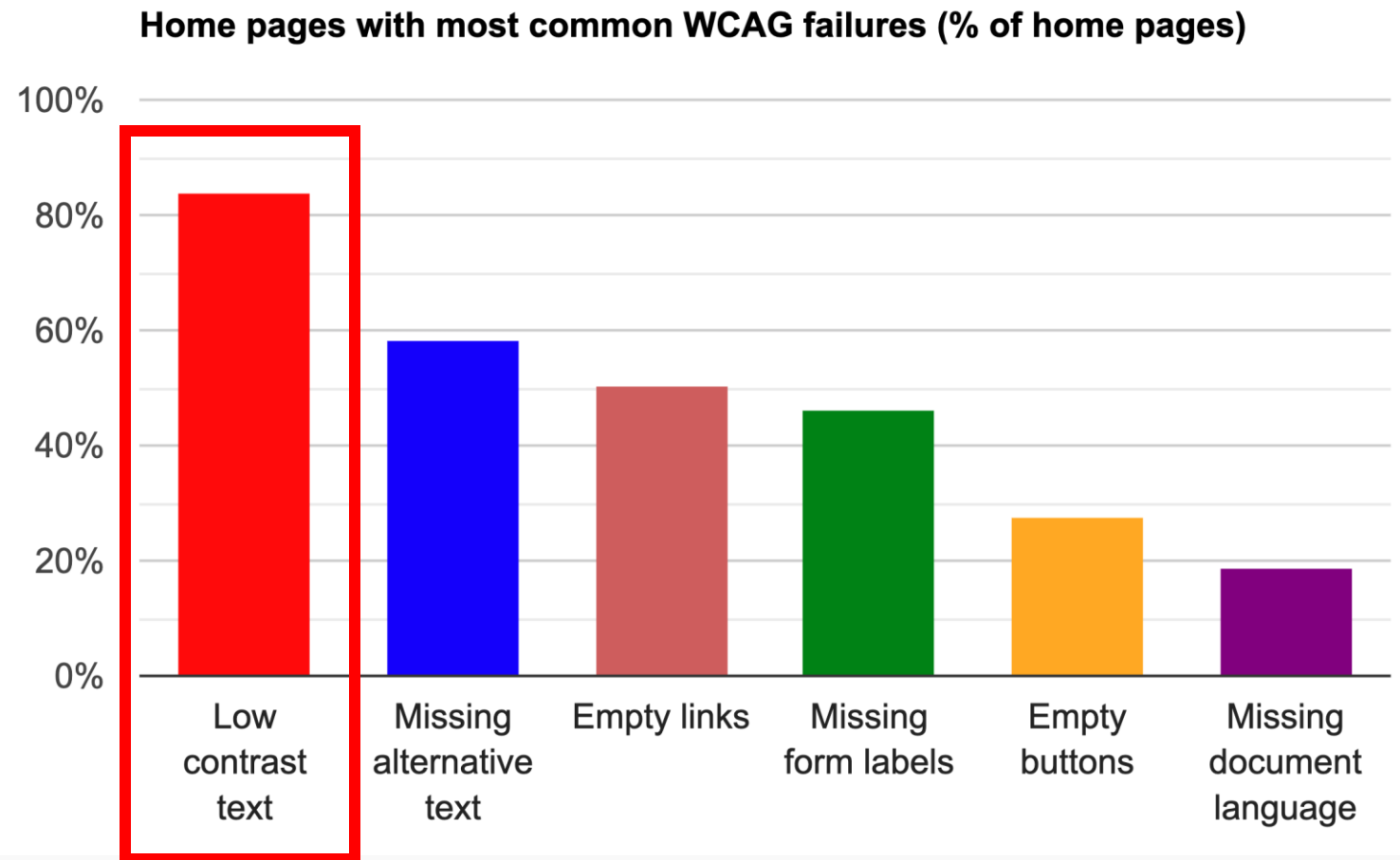- Regulated and enforced by the U.S. Department of Justice

Poll #1

What is the most common Accessibility issue on the Web?

The WebAIM Million Report

- The 2023 report on the accessibility of the top 1,000,000 home pages

Source:

https://webaim.org/projects/million/

Home pages with most common WCAG failures (% of home pages)

New WCAG 2.2 Release

October 5, 2023 – WCAG 2.2 is the new W3C recommendation

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Focus Not Obscured
2.4.11

"Hey, stop hiding my keyboard focus!"

- The level AA requirement says that at least some of the element with focus is visible.

- At level AAA all of the component and its focus indicator must be visible.

- **Sticky headers, cookie popup and non-modal dialogues may cover up the part of the page that has current keyboard focus.**

Focus Appearance 2.4.13

"Where in the world is my keyboard focused?"

- Requires a clearly visible "focus indicator" that shows the current point of focus of the keyboard.

- Sighted users who depend on a keyboard to navigate the web page will be able to visually tell where their keyboard focus is.

- **Use a focus indicator of sufficient size and contrast.**

Dragging Movements 2.5.7

"*Oh crap! It's drag and drop!*"

- Drag and drop actions require a fairly precise motion and the ability to keep pressure on the mouse button or touch screen without accidentally releasing.

- This can be challenging for some folks with motor or blindness disabilities.

- **Drag and drop should not be the only way that an action can be achieved.**

Target Size
2.5.8

"I can't click on that link, is too small!"
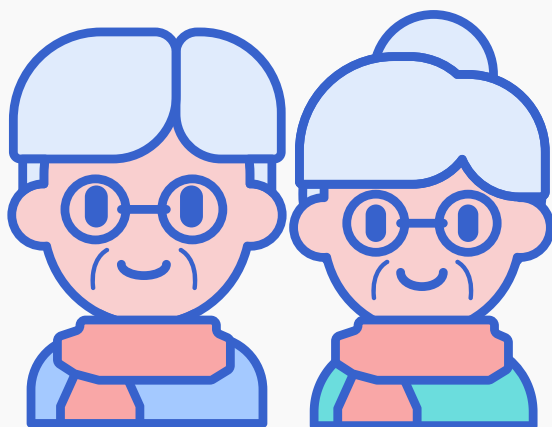
- Activating a small link, button, or radio button on a touch screen is a challenge for many people, but especially for people who struggle with fine motor skills in their hands.

- This is equally true when using the mouse or some other pointer device.

- **Make target areas at least 44px wide/tall**

Consistent Help
3.2.6

"What the heck! Where do I find help on this website?"

- Make it easier for users who need help to be able to find it.

- Help features, such as contact information or a self-help option, should be made available on multiple pages of a website,

- This information must appear in the same relative place on each of the pages where it appears.

- **This requirement will enable some people with cognitive disabilities to be able to get the help they need to complete their intended task.**

Redundant Entry
3.3.7

"This feels like going to a doctor's office... Don't make me enter the same info twice!

- Some forms require the user to input the same information more than once, for example a shipping and billing address.

- Completing redundant forms can be straining for some users, especially those with motor disabilities or cognitive disabilities.

- **Avoid redundant entry or make it easy to reuse data already entered.**

Accessible Authentication 3.3.8/9

"They want me to click on pictures of traffic lights to log in. It's really confusing for me."

- This requirement will help people with motor disabilities or cognitive issues including memory, dyslexia, dyscalculia and more.

- People forget their passwords, and transcribing authentication codes sent to your phone into the page can be prone to error.

- **Authentication must be possible without such cognitive tests, for instance, by allowing users to copy and paste their password from a 3rd party password management tool.**

Activity – 10 min

Is your favorite website accessible?

Activity #1

Is your favorite site accessible?

1. Think of your favorite website or app.

2. **Future-self: We're 20 years ahead and you possess a disability.**

3. Go to this website on your device.

4. Look for three things that might be hard for your future-self to use.

10 minutes Break

Back by 3:30pm

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Universal Design
1991

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Ronald L. Mace
1942 - 1998

He coined and passionately promoted the concept of **universal design**, a design philosophy that challenged convention and provided a design foundation for a more usable world.
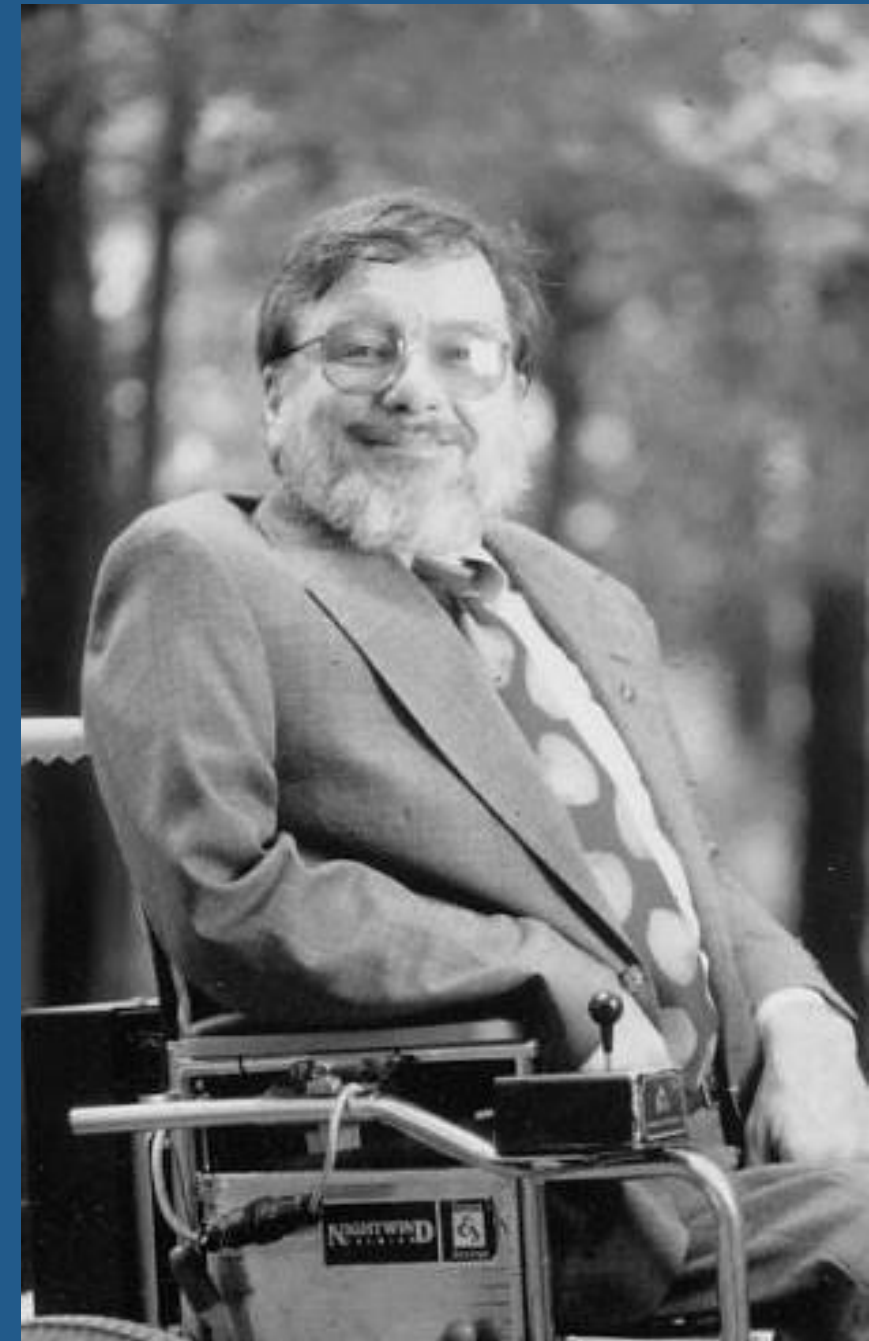
What is Universal Design?

The design of buildings, products or environments to be aesthetic and usable to the greatest extent possible by everyone, regardless of their age, ability, or status in life.

Aesthetic and Usable

Enabling Village by WOHA Architecture Office in Singapore

Photo by Edward Hendricks

Beautiful and functional

St. Olav's Hospital, in Norway

Until someone decides place a statue in front of the ramp

St. Olav's Hospital, in Norway

Universal Design Principles
Beyond physical spaces

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7 Principles of Universal Design

1 - Equitable Use

2 - Flexibility in Use

3 - Simple and Intuitive Use

4 - Perceptible Information

5 - Tolerance for Error

6 - Low Physical Effort

7 - Size and Space for Approach and Use

1
Equitable Use

The design is useful and marketable to people with diverse abilities

In Digital Product Design means:

- **Enough color contrast**
- **Descriptive icons**
- **Proper form labels and translation**

In the picture powered doors that close and open on sensors can be used both by a wheelchair bound person and by someone that has their hands full.

Illustrations Center for Universal Design - North Carolina State

2
Flexible in Use

The design meets a wide range of individual preferences and abilities.

In Digital Product Design means:

- **Proper heading styles**
- **Ability to zoom in/out**
- **No autoplay for audio and video**
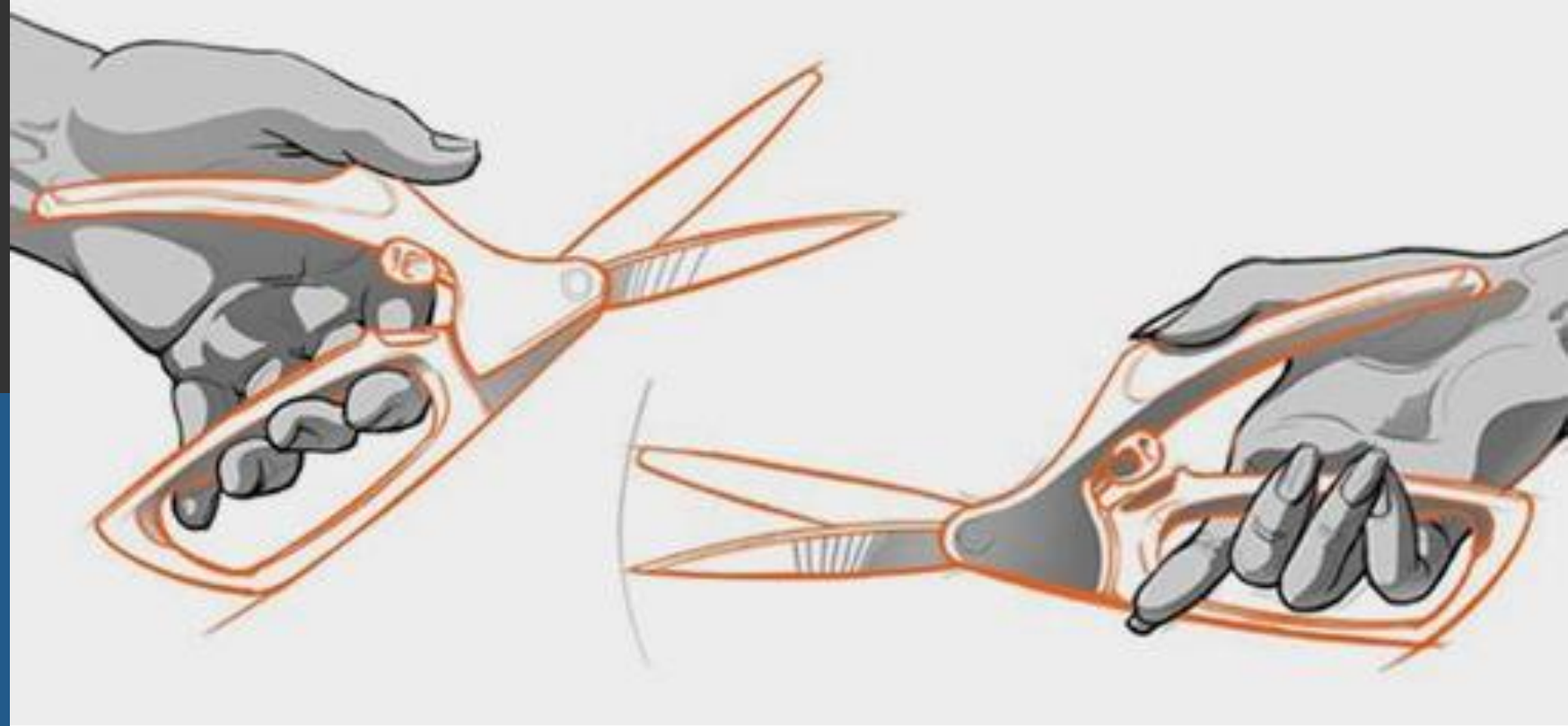
Illustrations Center for Universal Design - North Carolina State

In the picture, a pair of scissor with a large grip handles can be used by any one whether he is left or right handed without any inconvenience.

3
Simple and Intuitive Use

It is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

In Digital Product Design means:

- **Visible focus**

- **Minimum cognitive load**

- **Less is more**

Illustrations Center for Universal Design - North Carolina State

In the picture, the emergency push button is large and placed at a lower height, where even a child can understand that it is a panic button.

4 Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

In Digital Product Design means:

- **Semantic headings**
- **Tab order and visible focus**
- **Enough white space between content blocks**

Illustrations Center for Universal Design - North Carolina State

In the picture above a blind individual can use the mobile phone keypad because of the bump on the pad that will enable the user to identify the numbers without looking at the keypad.

5
Tolerance for Error

Design minimizes hazards and the adverse consequences of accidental or unintended actions.

In Digital Product Design means:

- **Undo, redo user inputs**
- **Error messages near the related elements**
- **No keyboard trapping**
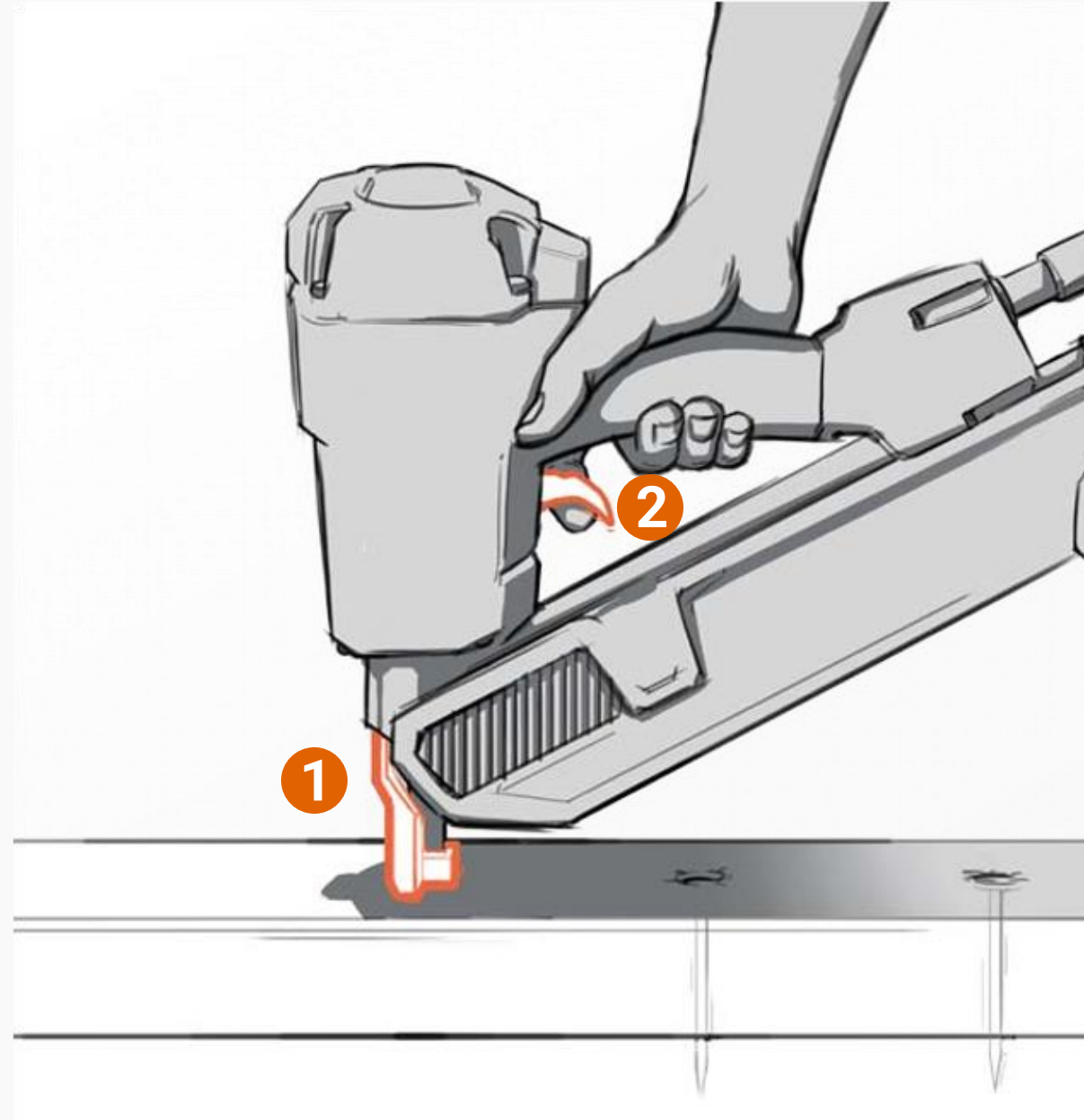
A nail gun requires the user to press the nail head against the surface before releasing the lock on the trigger.

This safety step removes the risk of accidents while the gun is pointed somewhere else.

Illustrations Center for Universal Design - North Carolina State

6
Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

In Digital Product Design means:

- No unnecessary 'required' information
- Objective instructions
- Large target areas.

Illustrations Center for Universal Design - North Carolina State

Compared to a round door-knob, lever door-knob does not require grip strength. A close fist or an elbow can open the door.

7
Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

In Digital Product Design means:

- No cookie popups blocking entry points
- Thoughtful skip-links
- Large target areas

Illustrations Center for Universal Design - North Carolina State

Retractable mechanical gates, also known as faregate or ticket barrier, consisting of revolving horizontal arms, allow only one person at a time to pass through, but is easily accessible by a person on a wheelchair, or a person carrying large baggage, or even with an obese commuter.

Inclusive Design
and Accessibility

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Book recommendation #1:

Mismatch
How Inclusion Shapes Design

Kat Holmes

Author, Mismatch - How Inclusion Shapes Design

Mismatch
How Inclusion Shapes Design

Kat Holmes
foreword by John Maeda

DESIGN, TECHNOLOGY, BUSINESS, LIFE
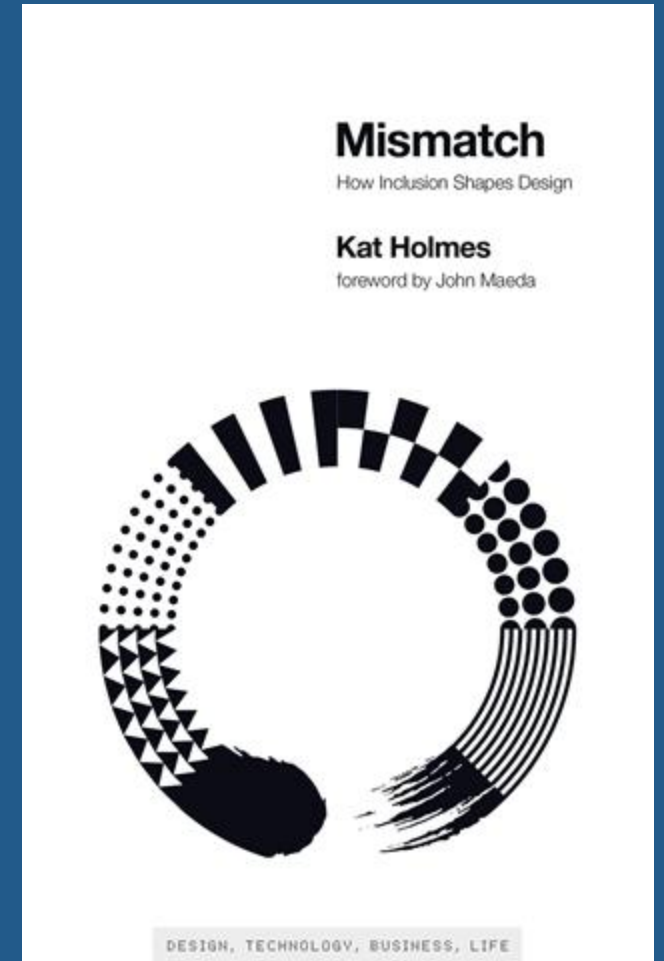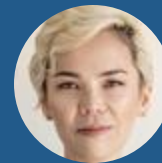
"We are all born and gain abilities as we grow. As we move through life, our abilities change as result of a illness or environment."

Kat Holmes

Author, Mismatch - How Inclusion Shapes Design

"A person's capabilities and limitations are always a factor in how successful they interact with a solution."

Kat Holmes

Author, Mismatch - How Inclusion Shapes Design

Disability is not

a personal health condition

Disability is
Mismatched human interactions

Microsoft Inclusive Product Innovation

Exclusion happens when we solve problems using our own biases.

Microsoft Inclusive Design Toolkit

https://www.microsoft.com/design/inclusive/

Inclusive Design

is a design philosophy that embraces how diverse people are beyond architecture and disabilities.

Inclusive Design Principle #1

1. Recognize Exclusion

Designing for inclusivity not only opens up our products and services to more people, it also reflects how people really are. All humans grow and adapt to the world around them and we want our designs to reflect that.

2. Solve for one, extend to many

Everyone has abilities, and limits to those abilities. Designing for people with permanent disabilities actually results in designs that benefit people universally. Constraints are a beautiful thing.

Inclusive Design Principle #3

3. Learn from diversity

Human beings are the real experts in adapting to diversity. Inclusive design puts people in the center from the very start of the process, and those fresh, diverse perspectives are the key to true insight.

Expanding Disabilities Spectrum

Ethnic Discrimination

Photo by Sushil Nash on Unsplash

Gender Equality

Photo by @gajus on Freepik

Sexual Orientation

Gender Identity

Cultural and Religious

Illustration by @kenchiro75 on Freepik

The Next Billion Users
and social-economic barriers

The Next Billion Users and Disabilities

80%

of the world population living with
disabilities live in the Southern Hemisphere.

source: design.google.com

Avoid the cookie-cutter approach

We need new tools and mental models that help us break the current mold.

The Designer's Critical Alphabet

Lesley-Ann Noel PhD

🐦 @mamaazure
✉ @lesleyannnoel

Assumptions

Our inferences and ideas are often based on assumptions that we haven't thought about critically. A critical thinker is attentive to assumptions because they are sometimes incorrect or misguided.

What are your assumptions about the people and the context that you are researching? Have you double-checked the truth of your assumptions?

Bias

Bias is disproportionate weight in favor of or against one thing, person, or group compared with another, usually in a way considered to be unfair.

Self-correction against implicit or unconscious bias takes a lot of conscious work.

Have you acknowledged your biases and tried to counter them by trying to understand the perspectives of others?

Critical Race Theory

CRT proposes that white supremacy and racial power are maintained over time, and in particular, that the law may play a role in this process.

How does your design solution change if it were developed for a user of a different race?

Deficit Thinking

In deficit-based thinking differences are seen as negative and factors that can retard progress. Designers sometimes frame design challenges through a deficit-based lens e.g. when they focus on the problems of a community.

Do you assume that the people that you're designing for have a 'problem'? Do they also think they have a problem? How does your solution change if you focus on strengths instead of deficits?

Emancipatory Research

Emancipatory research or transformative research is about including the perspective of people who are traditionally excluded from research.

What is the perspective of marginalized people on the work that you are doing? How does your design work shift power? Who does your work shift power to? How does your work do this?

Feminist Theory

Feminist theory aims to understand the nature of gender inequality. It examines women's and men's social roles, experiences, interests, chores, and feminist politics in a variety of fields.

How would a design concept change if it aimed to reduce gender inequality?

Geography

Geography is an all-encompassing discipline that seeks an understanding of Earth and its human and natural complexities, not merely where objects are, but also how they have changed and come to be. Geography is often defined in terms of two branches: human geography and physical geography.

How do physical and human geography enhance or limit your design?

Hetero-sexism

Heterosexism is a system of attitudes, bias, and discrimination in favor of opposite-sex sexuality and relationships. It can include the presumption that other people are heterosexual or that opposite-sex attractions and relationships are the only norm and therefore superior.

How does a design change if people are not presumed to be heterosexual?

Inter-sectionality

Intersectionality considers that various forms of social stratification, such as class, race, sexual orientation, age, religion, creed, disability and gender, do not exist separately from each other but are woven together.

What are the multiple forms of oppression that affect the stakeholders in your design challenge?

Justice (Social)

Social justice is concerned with the just relationship between individuals and their society, often considering how privileges, opportunities, and wealth ought to be distributed among individuals.

How can you use your design concept to advance a social justice agenda?

Kleptocracy

Kleptocracy is a government with corrupt leaders that use their power to exploit the people and natural resources of their own territory in order to extend their personal wealth and political powers. Typically, this system involves embezzlement of funds at the expense of the wider population.

The solutions we design for one system may not work for others. Have you considered the contextual nature of the solutions that you develop?

Linguistic Hegemony

The dominance of English can cause prejudices and stereotypes which, in turn, create discrimination against those who do not or can not speak English.

Do you assume that all of your stakeholders speak the dominant language? How could your design improve if you did not have this assumption?

Marginalization

Marginalization is the process where something or someone is pushed to the edge of a group and is treated as insignificant or peripheral.

How does your design disrupt the marginalization of people? If you work with marginalized groups, how will you ensure that the work is developed from their perspective and not your own?

Neo-colonialism

Neocolonialism is the control of less-developed countries by developed countries through indirect means, including economic, political, cultural, or other pressures.

How can you ensure that the power dynamics in your cross-cultural design collaborations don't mimic colonial power structures and hierarchies?

Objectivity

Objectivity is a belief that personal prejudices, preferences of the researcher do not contaminate the collection of or analysis of data.

Some researchers, however, believe that objectivity is impossible to achieve and therefore we must acknowledge and declare our biases to produce better research.

Do you think objectivity is achievable in the design work that you do?

Privilege

Privilege is a special right, advantage, or immunity granted or available only to a particular person or group. The term is often used to describe social inequality, particularly in regard to race, ethnicity, age, disability, gender identity, sexual orientation, religion, and social class. Have you acknowledged your privilege, and how that impacts the ways the design work that you do and the people that you design with and for?

Questioning Mindset

Questions help us to explore, to challenge and to gain deeper insights into societal problems, and this can lead to better problem framing and more innovative solutions.

Have you tried using questions to identify opportunities, reveal underlying needs, and understand your user's context?

Resilience

Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress, such as family and relationship problems, serious health problems or workplace and financial stressors. It means "bouncing back" from difficult experiences.

How can you recognize the resilience of your collaborators? Does this shift your perception from viewing a deficit-based perspective of a situation to a strength-based situation?

Self Awareness

Self Awareness is having a clear perception of your personality, including strengths, weaknesses, thoughts, beliefs, motivation, and emotions. Self Awareness allows you to understand other people, how they perceive you, your attitude and your responses to them in the moment.

How might you become more self-aware? How could you be self-aware and reflect on how your presence affects a situation?

Transformative Research

Transformative research is a synonym for emancipatory research. It is a framework that centers the experiences of marginalized communities and includes analysis of power differentials that have led to marginalization, links research findings to actions intended to mitigate inequities and harms.

Unlearning Oppression

Some everyday practices seem normal and go unquestioned but discriminate against minorities. Many well-intended people are unaware that their actions are oppressive. Oppression affects both the oppressed and the oppressors. To unlearn oppression, we must acknowledge our everyday oppressive practices and engage in critical self-reflection with the aim of becoming actively anti-oppressive.

What will you do to unlearn oppressive behaviors?

Values

Values reflect a person's sense of right and wrong or what "ought" to be. Values influence attitudes and behavior. One's value system develops from one's lived experiences, upbringing and culture among other factors. Your design solution or analysis of a problem space may be influenced by your own value system.

Do you and the people you are design for have the same value system? How does this affect your approach?

Western-ization

The West is often assumed to be the center of power, and Western views on development and modernity often are pervasive in design analyses of problems.

How would your design concept change if you de-westernized it by removing these Western concepts of modernity and development or Eurocentric or American-centric biases?

Xenophobia

Xenophobia is the fear and distrust of that which is perceived to be foreign or strange. Xenophobia can manifest itself in suspicion of the activities of others, and a desire to eliminate their presence to secure a presumed purity. It is related to a fear of losing national, ethnic or racial identity.

How does xenophobia (your own, or of other stakeholders in the design problem) affect the analysis of a problem, or the proposed solutions?

You...

You play a role in the transformation! You have agency to question what is happening around you and to take action as a response. Design may be one form of response.

As a designer, you may play many different roles... which is needed in this situation... agent, facilitator or researcher? How can you facilitate collaboration and co-creation across multi-disciplinary and multi-cultural teams?

Zero-sum Thinking

Zero-sum thinking is a binary way of thinking where one person's gain is another's loss. In the zero-sum approach there is the idea that things are either/or, and no understanding that there could be mutual gain. As a designer, you could use a participatory approach to encourage stakeholders to analyze a situation more deeply and to generate and consider more than one option.

Play
Questiona
Aproveite!
Lesley

The Designer's Critical Alphabet

by Lesley-Ann Noel PhD, College of Design, North Carolina State University

instagram: @lesleyannnoel | x: @mamaazure

Photo by Yogendra Singh on Unsplash

Bias

Bias is disproportionate weight in favor of or against one thing, person, or group compared with another, usually in a way considered to be unfair.

- Self-correction against implicit or unconscious bias takes a lot of conscious work.
- **Have you acknowledged your biases and tried to counter them by trying to understand the perspective of others?**

Heterosexism

Heterosexism is a system of attitudes, bias and discrimination in favor of opposite-sex sexuality and relationships.

- It can include the presumption that other people are heterosexual or that opposite-sex attractions and relationships are the only norm and therefore superior.

- How does a design change if people are not presumed to be heterosexual?

Book recommendation #2:

A Web for Everyone
Designing Accessible User Experiences

Sarah Horton and Whitney Quensenbery

Authors, A Web for Everyone: Designing Accessible Experiences

Chapter 2: People First: Designing for Differences

Trevor
High school student
with autism

Emily
Cerebral palsy, living
independently

Jacob
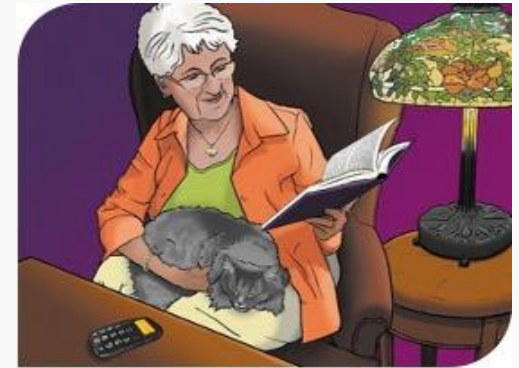Blind, a bit of a geek

Lea
Living with fatigue
and pain

Steven
Deaf, ASL speaker

Vishnu
Global citizen with low vision

Maria
Bilingual mobile user

Carol
Grandmother with macular
degeneration

Emily, 24
Cerebral palsy, living independently

Wants to do everything for herself

- Works part-time at a local community center
- Difficult to use hands and has some difficulty speaking clearly; uses a motorized wheelchair
- Uses the computer well, with the right input device; good at finding efficient search terms
- Wants to do everything for herself; can be impatient.

Assistive Technology
- Augmented & Alternative Communication (AAC) with speech generator.
- Scooter with joystick control, iPad attached

Lea, 35
Living with fatigue and pain

No one gets that this is a disability

- Writes for a trade publication; works from home
- Fatigue from fibromyalgia, trackball, and special keyboard
- Average computer user with a Masters degree
- Wishes people would understand how hard it can be for her to make it through the day

Assistive Technology
- Split keyboard for less strain on her wrists
- Keyboard controls to minimize arm movement
- Dragon Naturally Speaking (speech recognition)

Jacob, 32
Blind, a bit of a geek

"The right technology lets me do anything."

- College graduate, legal training courses
- Shares an apartment with a friend
- Paralegal, reviews cases and writes case summaries
- Laptop, braille display, iPhone

Assistive Technology
- Screen reader (JAWS/laptop, VoiceOver/phone)
- Audio recorder (to take notes)
- Braille display

Inclusive Design Process
Shifting Accessibility Left

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FOR ACCESSIBLE IDEA DATA

Typical Design Process

Problems

Solutions
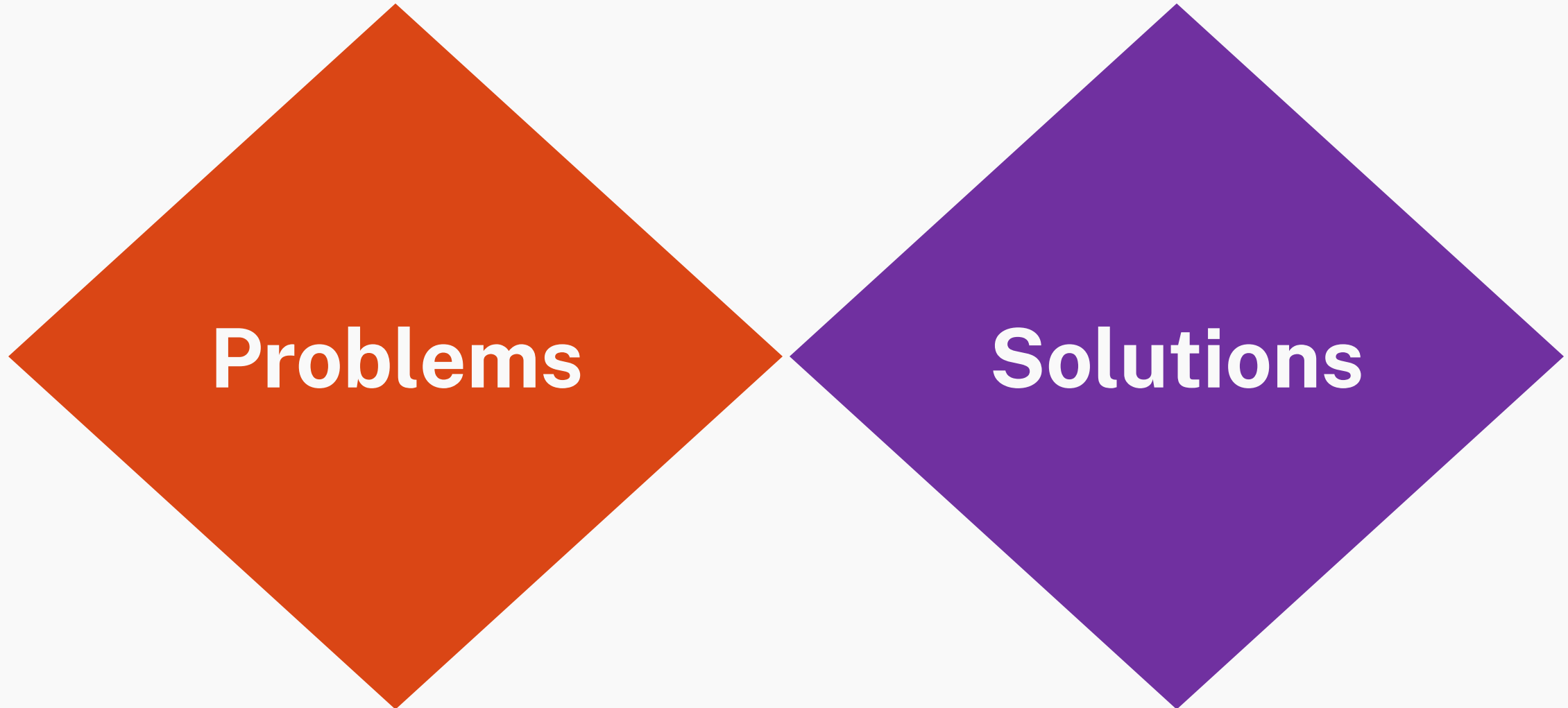
Typical Design Process motivation

Requirements
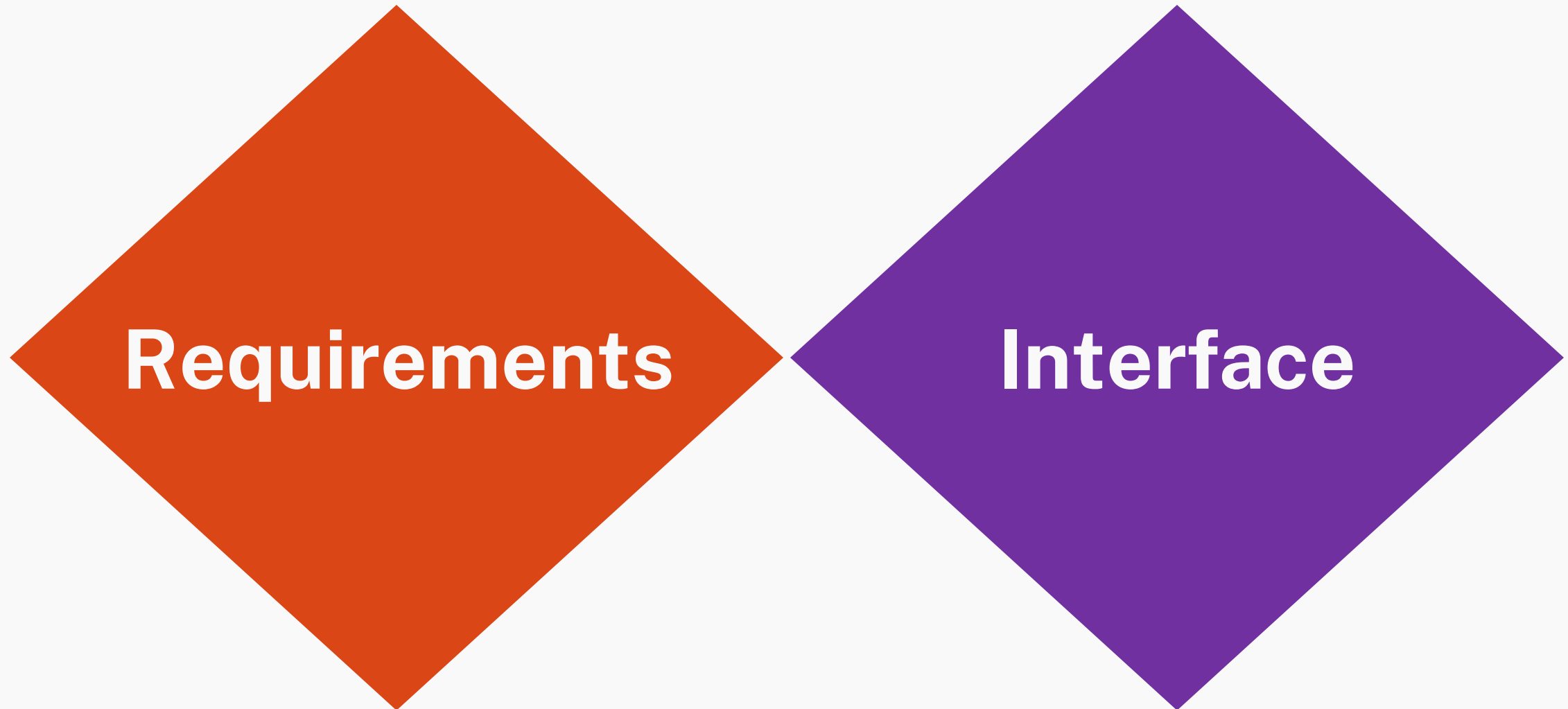
Interface

Typical User Experience Artifacts

Requirements

Interface

User Stories

Wireframe

Visual Prototype

Visual Design

To Dev
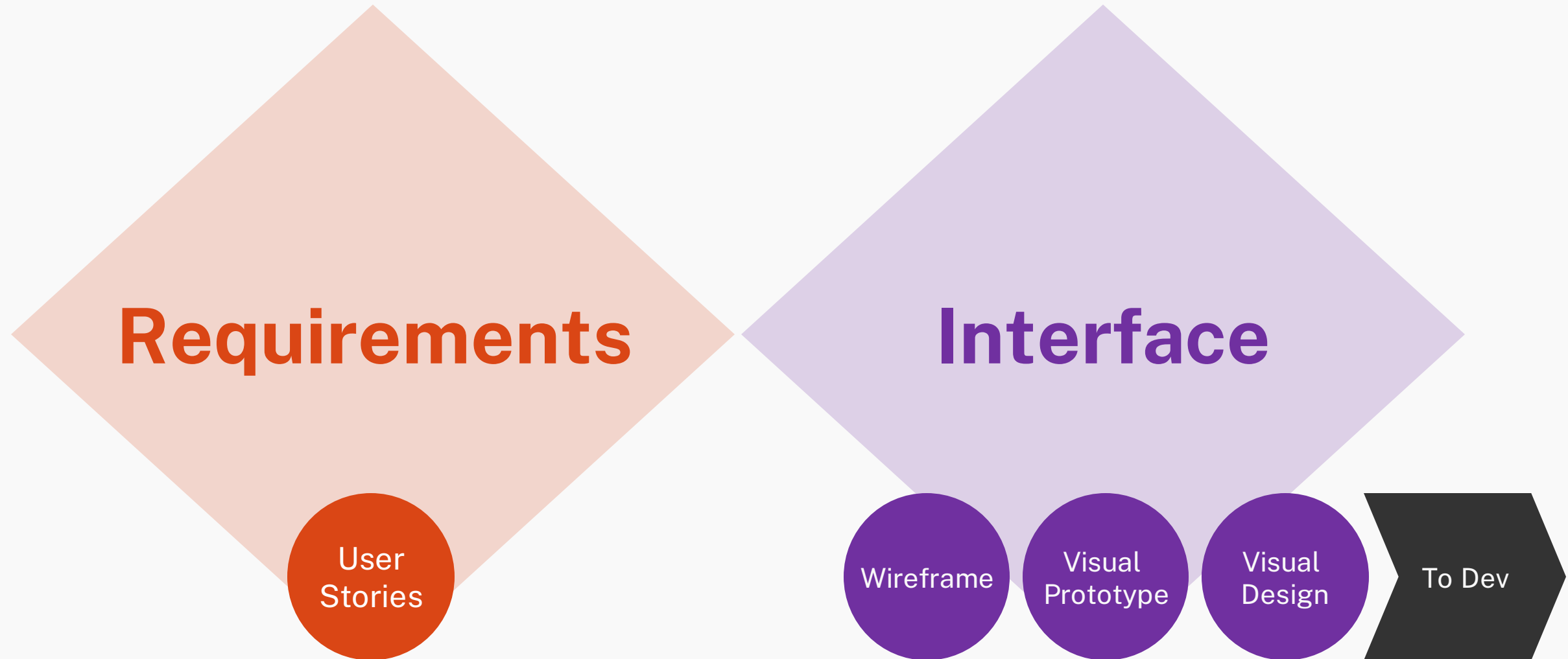
How many times have you seen Latin script placeholders in interface design?

- This is a common practice that creates barriers
- Even if applied early in the process
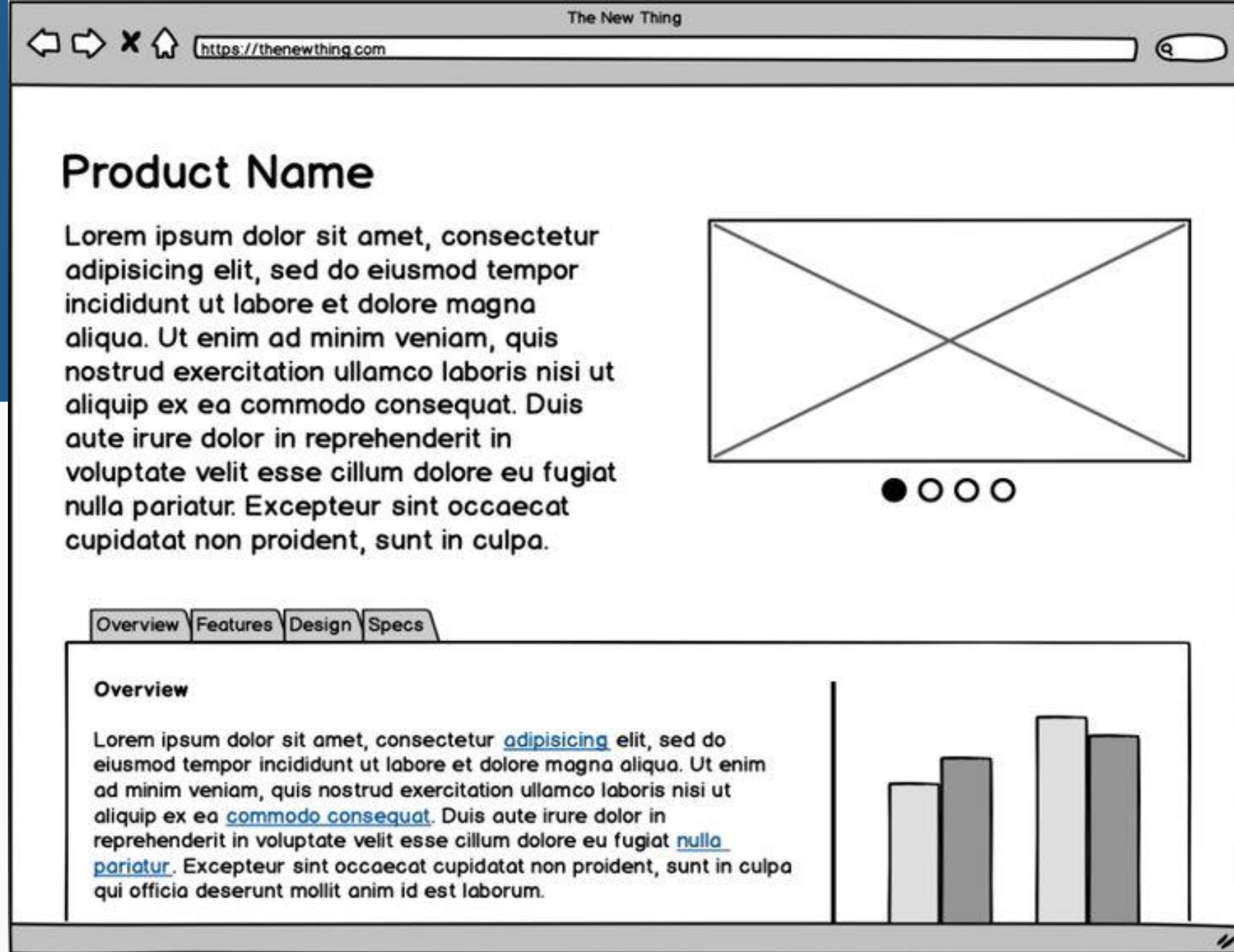
The later the content creation, the higher the risk of accessibility violations.

- Late content delays the opportunity to test with people with disabilities.

- The earlier the better

Agency

Home   About   Store   Blog   Contact

Aliquam dictum est nec urna posuere porta. Ut at eros pellentesque, venenatis nisi ut, suscipit ligula. Pellentesque a ex gravida, aliquet nisl vel, convallis ligula.

Volutpat
In convallis vel justo eu ultrices. Suspendisse viverra nisi non laoreet.

Imenaeos arcu
Maecenas ipsum arcu, pulvinar in nisi id, pulvinar ultricies nisl.

Dolor sit amet

Sed Hapien Semper
Proin aliquam nulla ultricies, suscipit odio sed, nibh. Pellentesque facilisis orci non felis rutrum, nec.

Click Here

Lorem ipsum create barriers

Poor Content leads to Poor Accessibility

Visual bias create barriers

Content and Accessibility as an afterthought is an exclusionary practice

The business case for accessibility

100x

the cost of fixing a defect in production than addressing it in design.

Source: https://www.deque.com/blog/the-business-case-for-accessibility/

Content and Accessibility as afterthought

Requirements

Interface

User Stories

Wireframe

Visual Prototype

Visual Design

Content & Accessibility
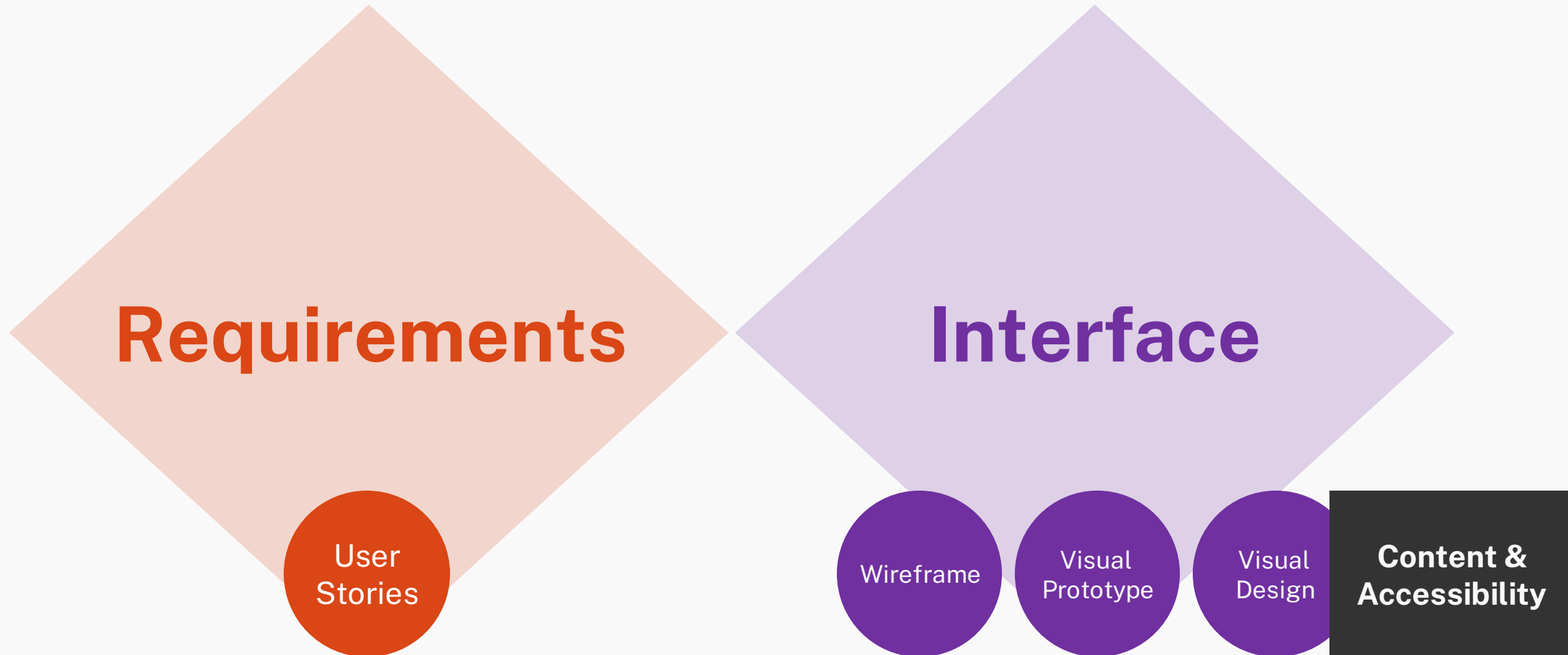
Shifting accessibility <u>left</u> is crucial

Requirements

Interface

Content & Accessibility

Shift Left
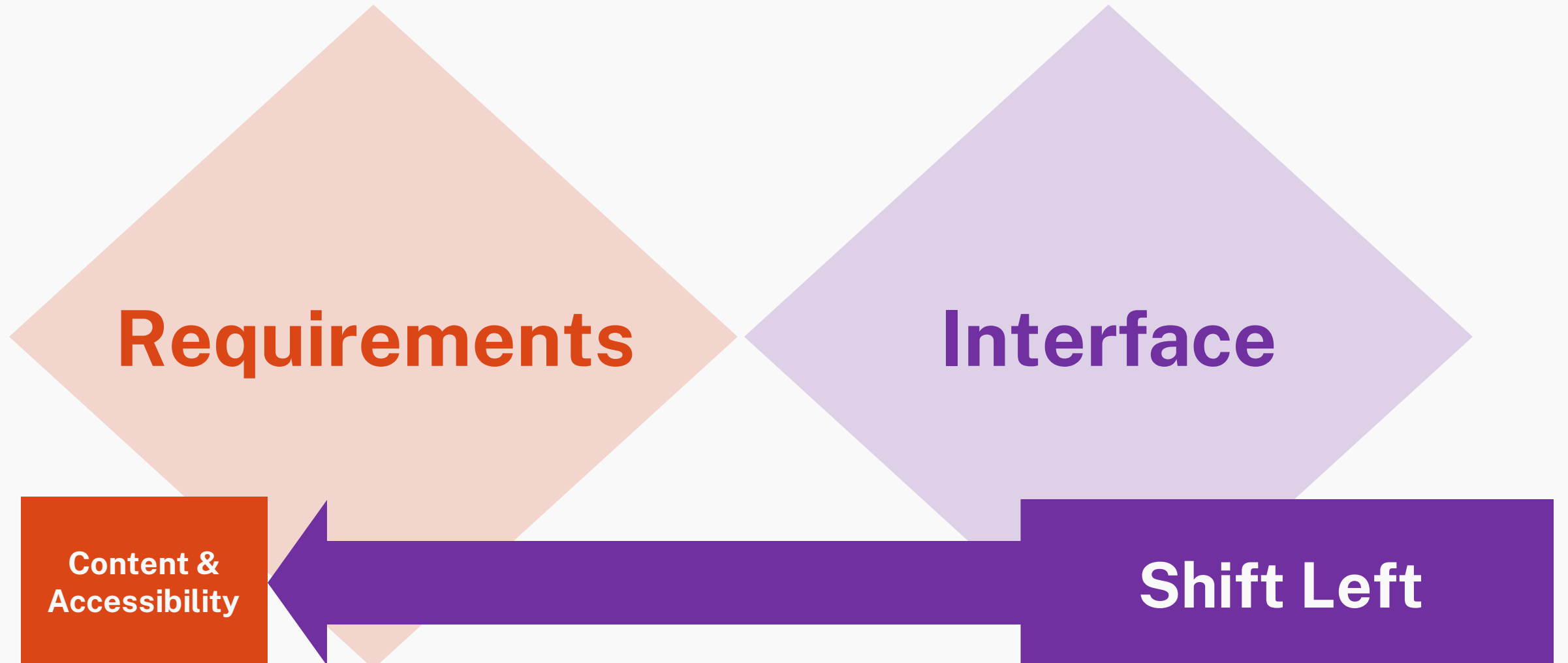
Inclusive check-points from day-1

Requirements

Include people with disabilities

Do not assume Accessibility as a compliance check.

Research

Diversify your target users

with diverse levels of disabilities and inclusion.

Design

Design with intent

Content design is crucial for assistive technologies.

Development

Inclusive Stories / Acceptance Criteria

Promote accessible patterns and experiences.

Testing

Automation is not enough

QA's burden decreases as teams learn and understand digital accessibility

Deployment

Create additional Safeguards

Add Accessibility fences into pipelines and workflows.

Opportunity Gaps

Problem Definition
content

Visual Definition
interfaces

Epics, Stories & Tasks

Wireframe

Visual Prototype

Visual Design
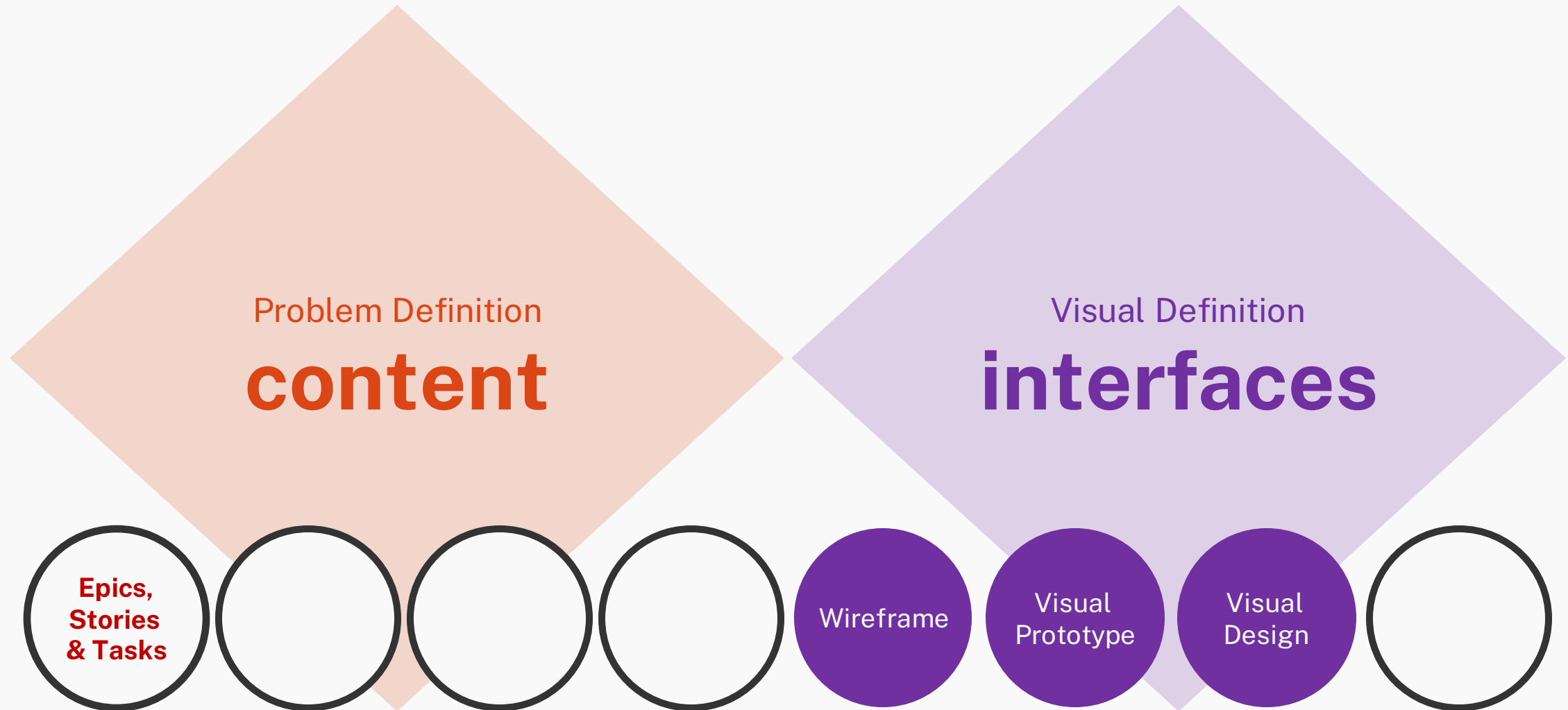
Adding Inclusive UX Artifacts

Problem Definition
content

Visual Definition
interfaces

Inclusive User Stories

Priority Guide

Intent Framing

Content Prototype

Wireframe

Visual Prototype

Visual Design

Accessibility Notations
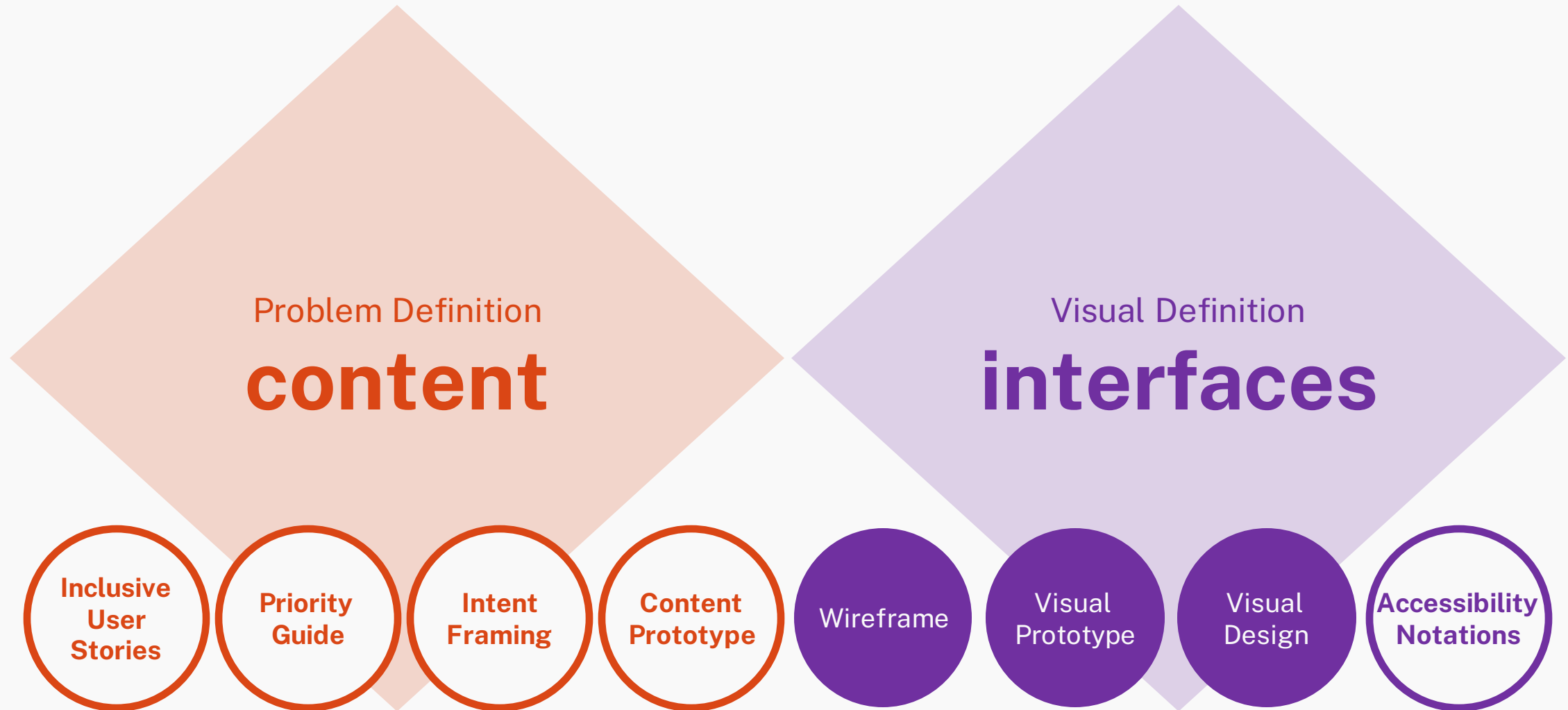
Inclusive UX Artifacts – What are they?

Inclusive User Stories

Inclusive User Stories help plan features in a way that considers and includes the needs of people with disabilities.

Priority Guides

Priority Guides help organize and prioritize design elements based on user needs, focusing on content importance over visual layout.

Intent Framing

Intent Framing is structuring interactions to clarify user intent, ensuring systems understand and respond to user needs accurately.

Content Prototyping

Content Prototyping is creating early versions of digital content that are designed to be tested by screen reader users before designing interfaces.

Accessibility Notations

Accessibility Notations are markings or notes added to designs to indicate accessibility features or requirements for inclusive use.

Designing with words
User Journeys + Priority Guides

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FOR ACCESSIBLE IDEA DATA

Content-first methodology, enables us to shift-left, by bringing Accessibility early in the design process.

A List Apart - May 03, 2018

Priority Guides:
A Content-First Alternative to Wireframes

by Heleen van Nues, Lennart Overkamp

https://alistapart.com/article/priority-guides-a-content-first-alternative-to-wireframes/

What is content-first?

The practice of designing with words before jumping into visual layout.

It all begins with a high-level diagraming

User Journey Mapping

User Journey Mapping Diagram

- A flow diagram of the end-user's high-level motives when using a product or website.

Front cover headline
Stage 1: Job Searching

What's your intent?
Access the Job Search Engine

What's your intent?
Search for Jobs

What's your intent?
Browse Job Listings

Front cover headline
Stage 2: Reviewing Job Descriptions

What's your intent?
Select a Job Listing

What's your intent?
Review Job Description and Requirements

What's your intent?
Save or Share Job Listing

Front cover headline
Stage 3: Applying for a Job

What's your intent?
Select 'Apply Now' Button

What's your intent?
Complete Application Form

What's your intent?
Submit Application

Detailed Journey Steps

- Describe each step of the user journey with additional details.

Front cover headline

Stage 1: Job Searching

What's your intent?

Access the Job Search Engine

Description
Jacob accesses the job search engine via his laptop using a screen reader (JAWS).

The website is fully accessible, with screen reader-friendly labels, headings, and alternative text for images.

What's your intent?

Search for Jobs

Description
Jacob types in the search bar the job title he's interested in (e.g., Junior Paralegal) and the location (e.g., New York).

He can also use filters to narrow down the search based on other criteria like company, job type (full-time, part-time, contract), and salary range.

Front cover headline

Stage 2: Reviewing Job Descriptions

What's your intent?

Select a Job Listing

Description
Jacob selects a job listing that interests him to view more details.

The screen reader reads out the job description, requirements, and benefits.

What's your intent?

Review Job Description and Requirements

Description
Jacob reviews the job description, requirements, and other details to determine if it's a good fit for him.

What's your intent?

Save or Share Job Listing

Description
Jacob has the option to save the job

Front cover headline

Stage 3: Applying for a Job

What's your intent?

Select 'Apply Now' Button

Description
Jacob selects the 'Apply Now' button on the job listing page.

The application page is accessible and easy to navigate with a screen reader and keyboard.

What's your intent?

Complete Application Form

Description
Jacob fills out the application form, which includes uploading his resume and cover letter, and answering any additional questions required by the employer.

The form fields are clearly labeled and easy to navigate using a screen reader.

One small step for design, one giant leap for accessibility.

Priority Guides

What are priority guides?

Content boxes and elements, sorted by user needs from top to bottom and without layout specifications.

Priority Guides Example

Guide Template

Name
Headline

Description
What's the user's expectation? Please describe.

Role
Is it a group of items, a heading, a form input, a button or an image?

Expected action
How do you think the user will react?

Guide Example

Name
Search for jobs

Description
Search for keywords, company name, job title.

Role
Search input

Expected action
User keyboard input or dictation. Search action upon pressing submit button.

From Priority guides To Intent Framing

A group of guides create an intent frame

Guide Template

Name
Headline

Description
What's the user's expectation? Please describe.

Role
Is it a group of items, a heading, a form input, a button or an image?

Expected action
How do you think the user will react?

Guide Example

Name
Search for jobs

Description
Search for keywords, company name, job title.

Role
Search input

Expected action
User keyboard input or dictation. Search action upon pressing submit button.

Section Title
Search

Requirements
Job search section with two inputs for entering search string and location.

Name
Search for jobs

Description
Search for keywords, company name, job title.

Role
Search input

Expected action
User keyboard input or dictation. Search action upon pressing submit button.

Name
Location

Description
Enter a specific location or "remote". Enable your current location for sorting results by distance.

Role
input

Expected action
If geo-location is enabled, user will need to allow browser permission.

Page Title
Jobs at Great Places To Work

Description
Find your next job at one of the Top 100 Great Place to Work company.

Section Title
Search

Requirements
Job search section with two inputs for entering search string and location.

Name
Search for jobs

Description
Search for keywords, company name, job title.

Role
Search input

Expected action
User keyboard input or dictation. Search action upon pressing submit button.

Name
Location

Description
Enter a specific location or "remote". Enable your current location for sorting results by distance.

Role
input

Expected action
If geo-location is enabled, user will need to allow browser permission.

Section Title
Search Results

Requirements
List of results, sorted by distance if geo-location is enabled.

Fields:
• Job title
• Company name
• Full time, part-time, contract
• Date posted
• Job ID
• Description

Navigation
• Results
  • Pagination for every 10 results
• List item
  • Link to job description (JD)
  • Quick apply to skip JD
  • Share a position with others
  • Save for later

Name
Be confident! One of the [888] jobs we found can be yours.

Description
Number of results with an inspiring and uplifting message.

The Sequence of Priority and Intent

Priority Guide with Intent: Alignment through Content Early

By Simone Ehrlich

User Research

Understand the user needs

Priority Guides

Propose the hierarchy of information and the intent of each element.

Intent Framing

Propose the layout based on the priority and intent of each element

Wire Framing

Integrate real content into the prioritized layout

Quick 10min break!

Back by 00:00am

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Intent Framing Activity
Creating Content with Chat GPT

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Activity: Create a Job Search app

Creating content with ChatGPT

https://bit.ly/ahg-prompts

No Latin
Rapid Prototyping with Accessibility in Mind

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No Latin – Rapid Prototyping with Accessibility in mind

Stop using Lorem Ipsum.
It creates barriers.

https://nolatin.com/

User Testing
with screen reader users

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Get familiar with Screen Readers:

- Familiarize yourself with the operation of various screen readers (like JAWS, NVDA, or VoiceOver) so you can understand the user's perspective and troubleshoot any issues that may arise during testing.

- If possible, test the prototype with different screen readers beforehand to identify any major issues.

- Deque has a great Screen Reader Keyboard Shortcuts and Gestures: https://dequeuniversity.com/screenreaders/

Test the Prototype is Screen Reader Compatible:

- Before conducting the test, make sure that your prototype is compatible with screen readers. It should be able to communicate the presence of buttons, images (with alt text), form elements, and other interactive features.

- Use semantic HTML and ARIA (Accessible Rich Internet Applications) roles where necessary to enhance accessibility.

Prepare Clear Testing Scenarios:

- Create clear, goal-oriented tasks or scenarios that users can attempt to complete using the prototype. These should reflect real-world use cases that a screen reader user might encounter.

- Avoid leading the user; instead, allow them to navigate the prototype naturally as they would in their everyday interactions.

Conduct a Pre-Session Briefing:

- Have a pre-test session to brief the participant about what to expect during the test and to understand their proficiency with their preferred screen reader.

- Ask about their usual settings, such as voice speed and verbosity level, to ensure the prototype is tested under realistic conditions.

Focus on Qualitative Feedback:

- Screen reader users may encounter issues that you haven't anticipated. Pay close attention to their verbal feedback, listen to the challenges they encounter, and note how they navigate and interact with the prototype.

- Record the session (with permission) to capture the screen reader audio. This can be invaluable for developers to understand exactly where users face difficulties.

Your feedback is valuable to us.

What worked well?

What can we improve in future workshops?

https://www.research.net/r/Weiss-workshop-11-6-survey

Independent evaluation provided by True North Evaluation

Questions and Answers

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Resources

- **Downloadable resources - https://weisscenter.github.io/public/conferences/2023-AHG/**

- **Step by step guide for Accessible Prototyping - https://weisscenter.github.io/public/conferences/2023-AHG/step-by-step.html**

Articles

- **Learning to Recognize Exclusion**
  https://uxpajournal.org/learning-recognize-exclusion/

- **Priority Guides: A Content-First Alternative to Wireframes**
  https://alistapart.com/article/priority-guides-a-content-first-alternative-to-wireframes/

- **The Sequence of Priority and Intent – Priority Guide with Intent: Alignment through Content Early**
  https://medium.com/workday-design/priority-guide-with-intent-alignment-through-content-early-fd5e1dad66fa

- **Screen Reader Keyboard Shortcuts and Gestures:**
  https://dequeuniversity.com/screenreaders/

Books

- **Mismatch – How Inclusion Shapes Design, By Kat Holmes** https://mitpress.mit.edu/9780262539487/mismatch/

- **A Web for Everyone, Designing Accessible User Experiences, By Sarah Horton & Whitney Quesenbery** https://rosenfeldmedia.com/books/a-web-for-everyone/

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Thank you!

IDEAs
that Work
Office of Special
Education Programs