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CSS227 WEB PROGRAMMING

LECTURE 04 – UI/UX


Hit any key to continue...

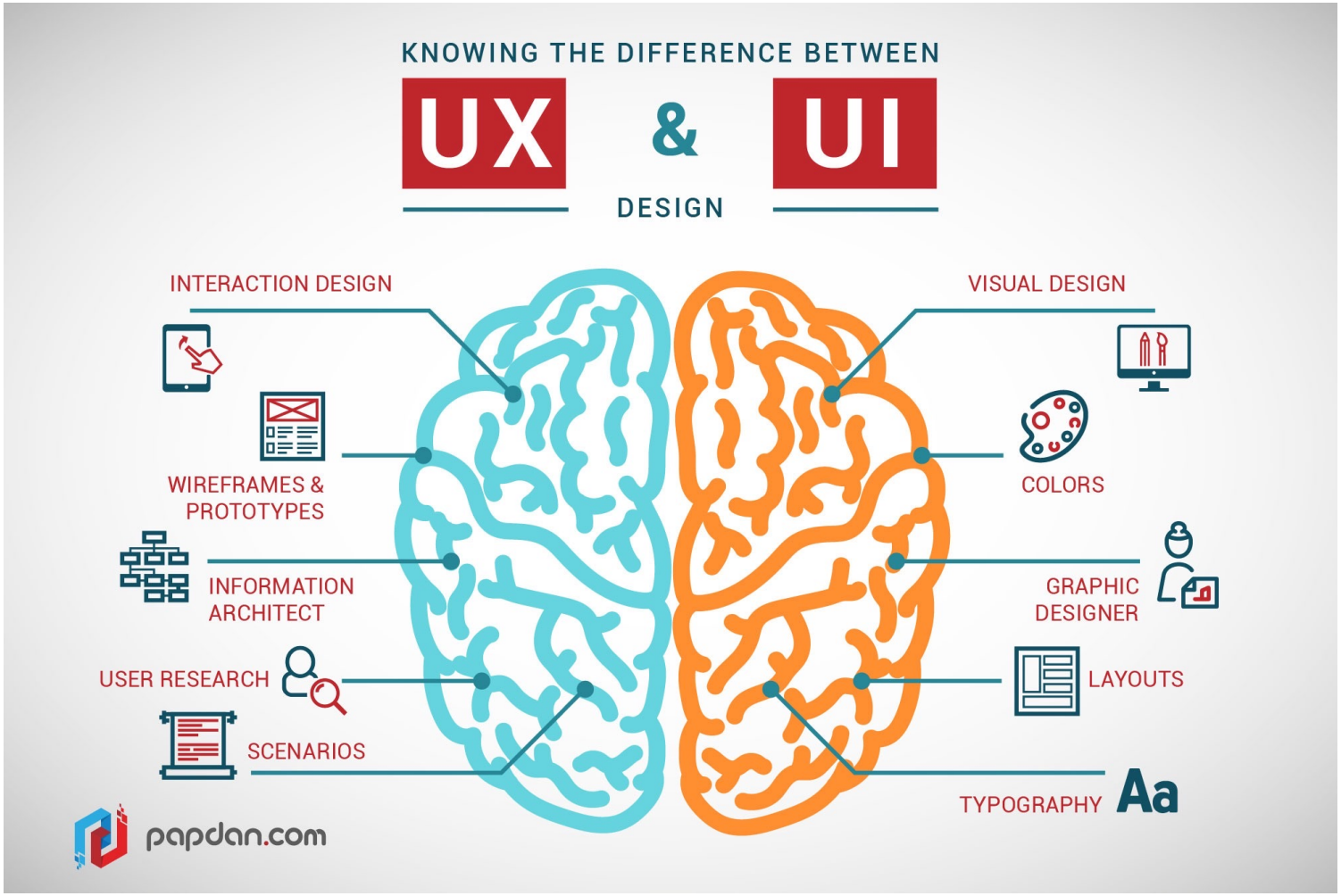

Press Any Key
To Start.
WHERE IS THE
"ANY" KEY?!

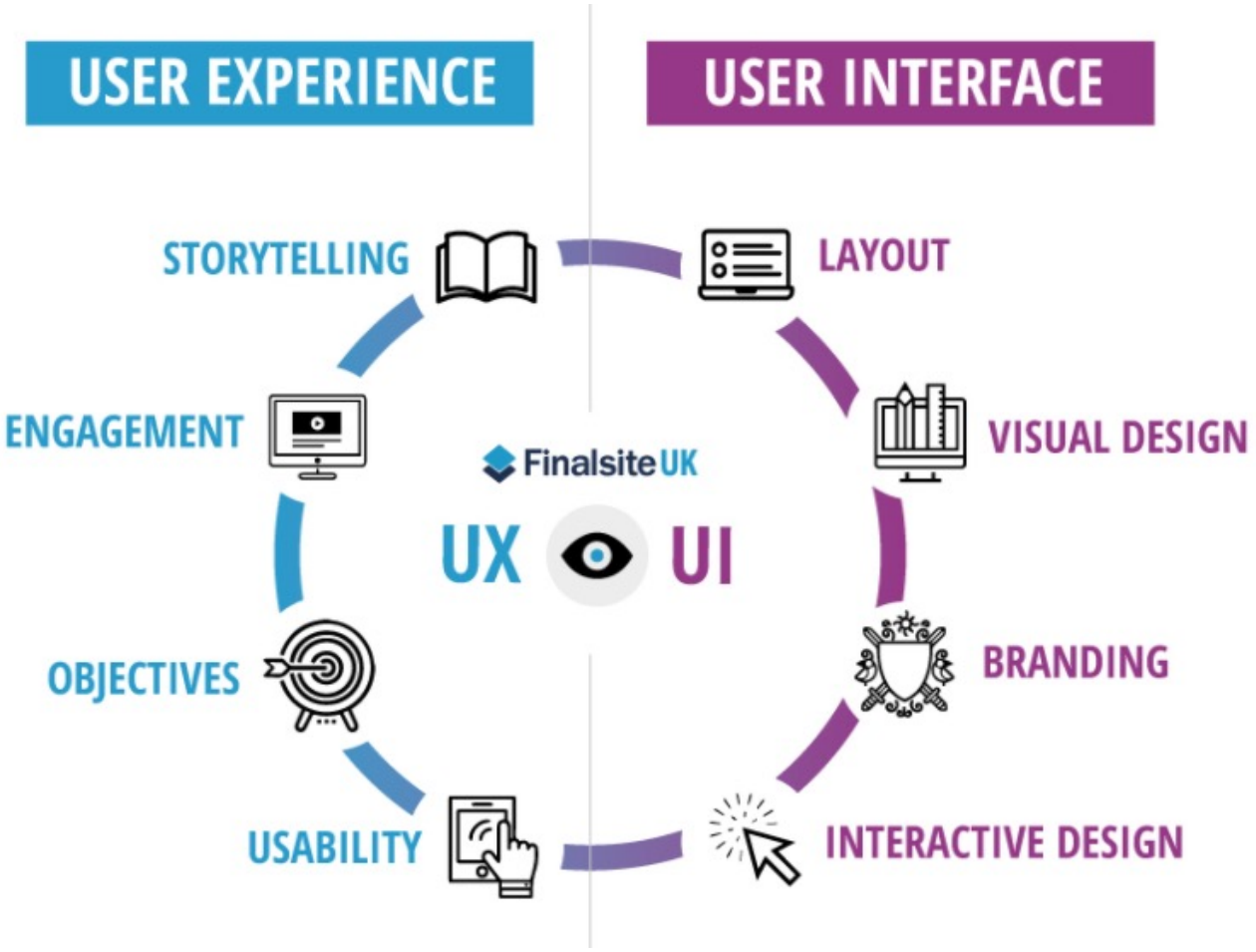
UX definition

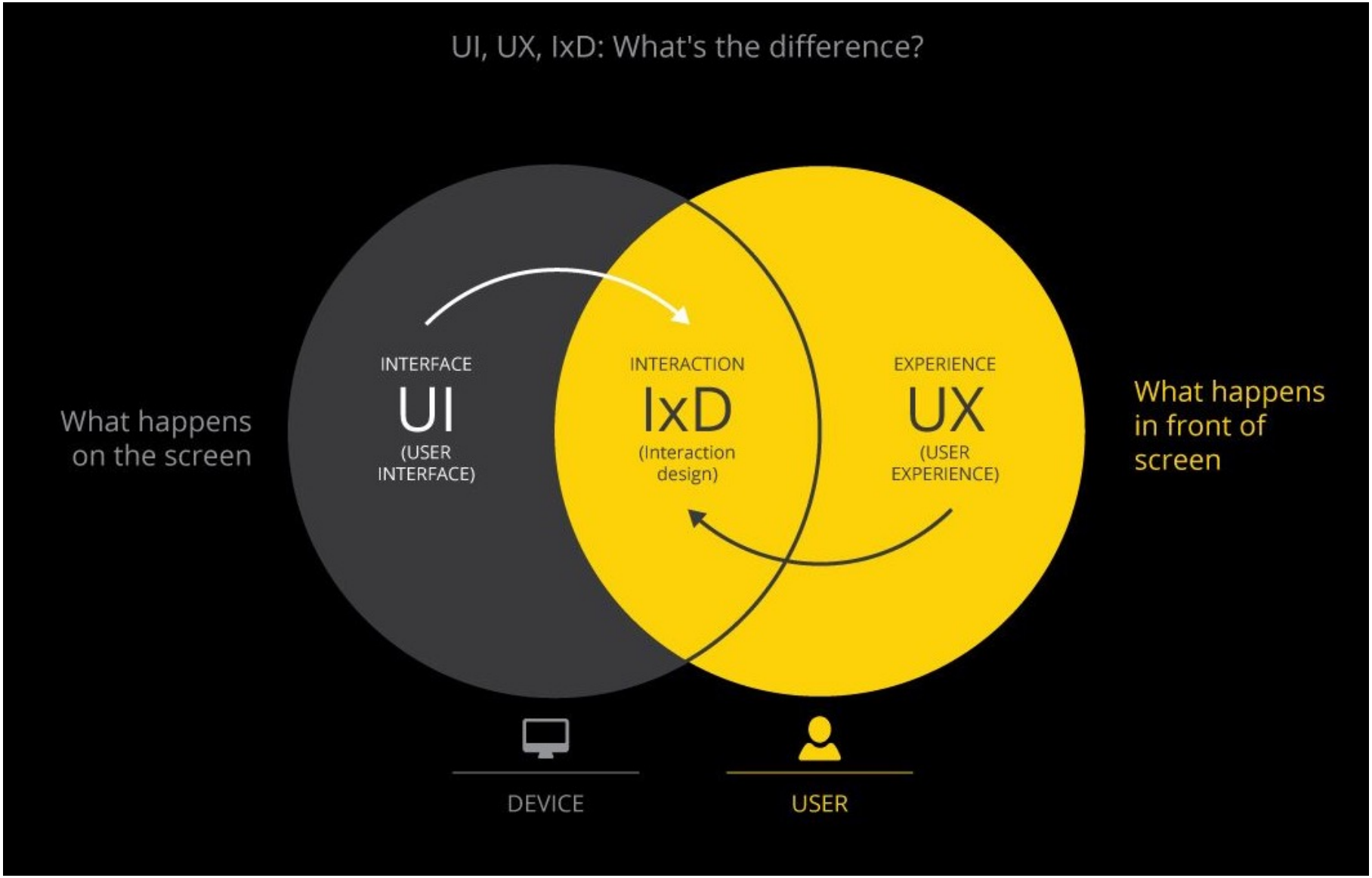
- The **internal experience** that a person has as they interact with every aspect of a products and services.
- Puts the end user at the center of the universe and **defines the system from that perspective**
- Usability is finding the **best match** between **a user's needs and a product's use**
- An appreciation for UX affects
  - Functionality
  - System Organization and Structure
  - Interactions and Look and Feel
  - Access

UI definition

- Everything designed into an information device with **which a person may interact.**
- This can include display screens, keyboards, a mouse and the appearance of a desktop.
- It is also **the way** through which a user interacts with an application or a website.
- UI fulfills two key UX needs:
  - Interactions and Look and Feel
  - Access


KNOWING THE DIFFERENCE BETWEEN
UX
&
UI
DESIGN
INTERACTION DESIGN
WIREFRAMES &
PROTOTYPES
INFORMATION
ARCHITECT
USER RESEARCH
SCENARIOS
VISUAL DESIGN
COLORS
GRAPHIC
DESIGNER
LAYOUTS
TYPOGRAPHY
Aa
papdan.com


USER EXPERIENCE
USER INTERFACE
STORYTELLING
LAYOUT
ENGAGEMENT
VISUAL DESIGN
FinalsiteUK
UX
UI
OBJECTIVES
BRANDING
USABILITY
INTERACTIVE DESIGN


UI, UX, IxD: What's the difference?
What happens on the screen
INTERFACE
UI
(USER INTERFACE)
INTERACTION
IxD
(Interaction design)
EXPERIENCE
UX
(USER EXPERIENCE)
What happens in front of screen
DEVICE
USER

UI design is what makes an interface **beautiful**
and
UX design is what makes an interface **useful**.

What is a good design?

- A solution that serves the users and satisfies the client
- Does what the users need and want
- Natural to use
- Helps them avoid trouble

Easy to say, very hard to do well

User Experience focuses on...

- Understanding of the user:
  - their needs
  - their values
  - their physical/mental abilities
  - their environments, etc.
- Aligning business goals with the user's interactions of the product, system and services.
- Understanding the foundation of the technologies being used: feasibility, scalability, limitations, etc.

User experience (UX)

- If you have ever purchased a product or benefitted from a service, you are a ***user***.

- When you interact with a product, service, or company, you are having an ***experience***.

- Companies want you to have a ***good experience*** using their product or services.

User experience (UX)

- A good user experience is one that enables the user to be ***effective***.
- User experience is often referred to as "**The science behind design**".
- Providing the human insights and hard data to support and validate design decisions.

The Four Key Elements of the UX Process

- **Behavior**
  - Learning about their habits and goals
  - Identifying needs and constraints
  - Aligning with existing behaviors to create solutions that are easy to use (efficient) and solve a real problem (effective)

- **Strategy**
  - UX is about design **empathy**, which means translating user needs into **actionable solutions**.
  - Needs to observe and understand what's happening from the user's perspective.

The Four Key Elements of the UX Process

- **Usability**
  - Good design is ultimately determined by **usability**.
  - However, if the design is not usable, all delightful details don't matter.
  - Creating products that **anyone can use**, especially if they have a **disability** or **impairment**.

- **Validation**
  - A critical piece of the UX process.
  - Ideally products need to be tested with users before deployed to the public.
    - **Smokescreen test**
    - **A/B testing**
    - **Clickable** or **coded prototype**

UX Trends

- Personalization
  - Everyone wants to feel special.
  - Giving the users what they want without them having to ask for it.

- Micro-interactions
- Designing for Any Device
- Gamification Redefined

What does Universal Accessibility mean?

- Letting everyone access your web site
- What does everyone include?
  - Non-Native speakers
  - Persons with disabilities
  - Everyone

User centered design

- Puts the end user at the center of the universe and defines the system from that perspective

- So, who or what is a user?

Human capabilities

- Memory
- Attention
- Visual and Audio Perception
- Learning
- Language + Communication
- Touch
- Ergonomics (sense of fit)

Values & sensibilities

- Level of experience
- Physical or mental capabilities and limitations
- Cultural expectations
- Language differences
- Senses of style
- Have different needs or values

Chanllenge: there is no one User

Who Are Your Users?

- Do you have a particular set of users in mind?
- Are you a representative user?
  - 6-8% of males are color blind
  - 30-70% of CS students have wrist problems
  - 65-75% of people wear glasses or contacts
  - 17% of impairments are uncorrectable
  - 6% of the population
  - ~50% as people get older
- THERE IS NO TYPICAL USER

Can you please everyone?

- Multiple Sizes
  - You can have different products for different types of users.
- One size fits most/enough
  - You can have a product for an average user and aim for average within a subset of the market
- Either way, you can not optimize the experience for EVERY SINGLE user.

User centered design

- Three Steps
  - Identify who the users are
  - Identify what they want to accomplish
  - Constantly assess (1) and (2)

7 fundamental UX design principles

- User-centricity
- Consistency
- Hierarchy
- Context
- User control
- Accessibility
- Usability

Source: https://www.uxdesigninstitute.com/blog/ux-design-principles/

Typical Disabilities

- Vision Problems
  - Blindness, low-vision, presbyopia, color blindness
- Hearing problems
  - Deafness, high-frequency loss
- Movement problems
  - Paraplegic, wrist problems, broken arm/hand, MS
- Difficulty in reading
  - Dyslexia, illiterate

Web Site Accessibility

- Making a web site accessible involves:
  - Ensuring your web site can be used effectively and efficiently with assistive devices such as screen readers
  - Making sure that a variety of disabled users can use your web site directly
  - Adding special HTML elements to handle various disabilities
  - Having separate web sites for the blind and other disabled groups
  - Testing your web site with a broad range of disabled users.

Why Should You Care

- This is only a small subset of potential users
  - You should have enough users without these
  - It can be a lot of work adapting your app to all potential users
  - Is it worth it?
- It is the right thing to do
  - But lots of companies (esp. startups) don’t bother
- Makes your application better
  - It tends to make you application better in any case
  - Many of the things you do for accessibility help the overall look and feel and usability of the interface
- Required legally

Assistive Technologies

- You can’t be expected to do everything for everyone
  - Accessibility doesn’t have to be built it
  - ***But it has to be available***
  - You should know what technology people actually use
- Assistive Technologies
  - Screen readers
  - Screen magnifiers
  - Assistive display settings
  - Alternative input devices

Making Web Sites Accessible

- General rules
  - HTML provides features that can enhance accessibility
    - Also feature that have the opposite effect
  - You should know what helps and what hinders
    - Use what helps
    - Avoid what hinders
- The bulk of the work has been done for you
  - W3C web accessibility content accessibility guidelines
  - Understanding this make accessibility easier

Guideline Examples

- Understandability guidelines
  - Make text readable and understandable
  - Make content appear and operate in predictable ways
  - Help users avoid and correct mistakes
- Robustness guidelines
  - Maximize compatibility with current assistive tools
  - Maximize compatibility with future assistive tools
- **DESIGNERS**:
  - Read and understand these guidelines before designing a web site

Jacob Nielsen's 10 Principles Of UI Design

1. Match the real world

- Ensure that users can understand meaning without having to go look up a word's definition.
- Never assume your understanding of words or concepts will match that of your users.
- Natural mapping
  - Physical arrangement of controls should match arrangement of function
- Actions should have immediate, visible effects
  - Kinds of feedback - visual, audio, haptic

Jacob Nielsen’s 10 Principles Of UI Design

2. Consistency and standards

- Users should not have to wonder whether different words, situations, or actions mean the same thing.

3. Help and documentation

4. User control and freedom

- Users may run in trouble by using a system function by mistake and need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue

Jacob Nielsen’s 10 Principles Of UI Design

5. Visibility of system status

- The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

6. Flexibility and efficiency

- The system can cater to both inexperienced and experienced users.
- Allow users to tailor frequent actions.

7. Recognition, not recall

- Instructions for use of the system should be visible or easily retrievable whenever appropriate.

Jacob Nielsen’s 10 Principles Of UI Design

8. Error prevention

- Even better than good error messages is a careful design which prevents a problem from occurring in the first place.
- Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

9. Help users recognize, diagnose, and recover from errors

- Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

10. Aesthetic and minimalist design

UX best practices for website owners

- **Mapping out what content you have and what content you need**.
  - The content should guide the information architecture
  - A content-centric approach takes care of the page transitions and overall flow of the website.

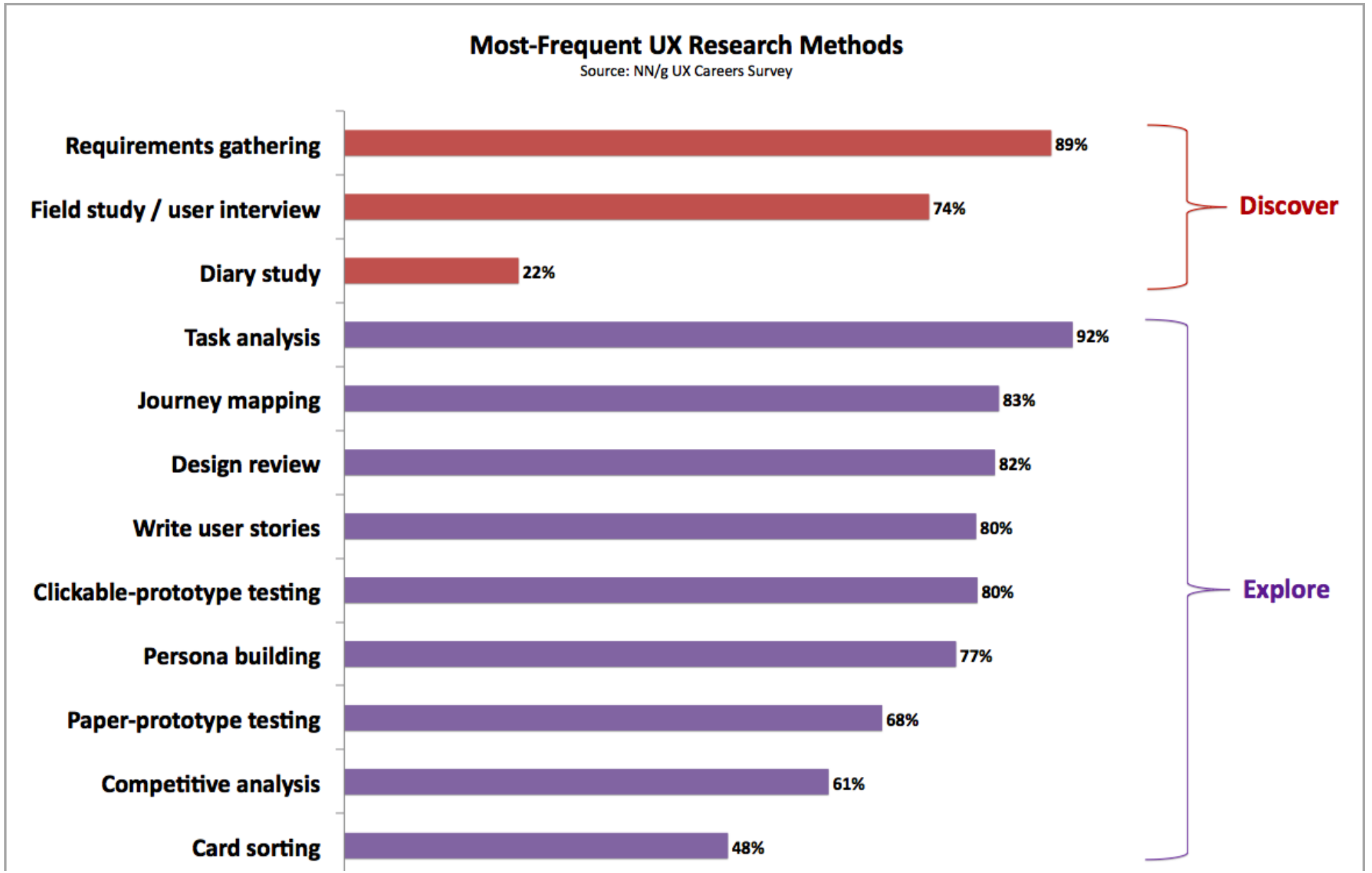
- **To know your users' goals**.
  - Why did they come to your website?
  - What do they need to be able to do, and how can you help them quickly accomplish it?

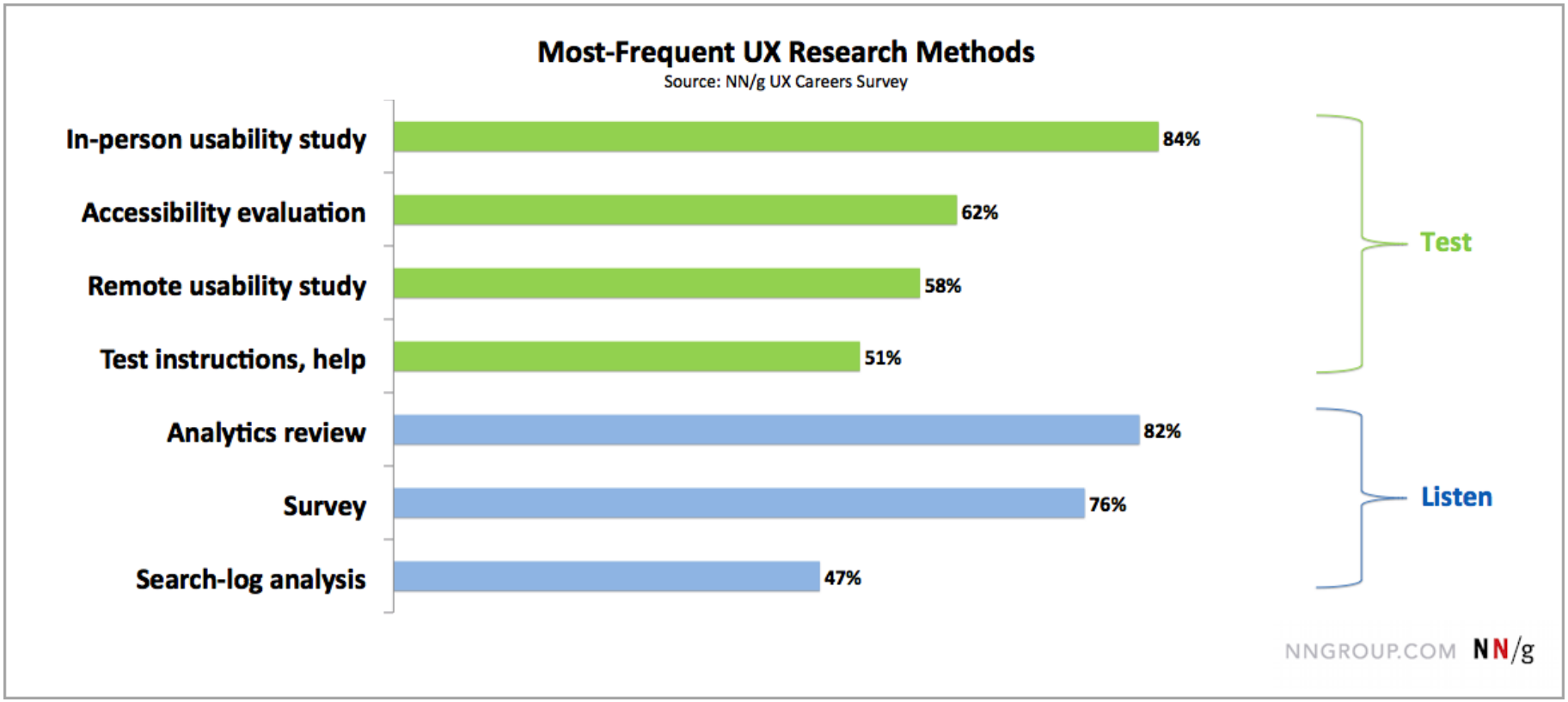
- Focus should be on **easier decision-making and faster navigation**.

- **Don't ask too much upfront in your website's lead forms!**
  - Each field a user needs to enter is a small barrier to conversion.
  - A good UX design is about asking only for the basic details required to start a conversation with your customer.

UI Best Practices for Website Owners

- Always **map out the steps toward conversion clearly *before* you start to design**
  - To plan for easy navigation at any stage of the user journey.
- Having **a brand strategy including brand identity guidelines.**
- **Plan UI design for shorter attention spans.**
  - With an average attention span of 8 seconds, modern users tend to scan content.
  - Therefore, most of the website content you create is scanned and not read.
- **Stay away from flashy images, videos, and components that can slow down the page loading speeds**.
- E**xperimental strategies can end up backfiring**.
  - Your customers and regular visitors are familiar with a set pattern of navigations, and menu styles used across every website they use in a day.
  - Any changes or quirky additions to the norm might effectively kill the seamlessness of the process and cost you a conversion.


Most-Frequent UX Research Methods
Source: NN/g UX Careers Survey
Requirements gathering
89%
Field study / user interview
74%
Diary study
22%
Task analysis
92%
Journey mapping
83%
Design review
82%
Write user stories
80%
Clickable-prototype testing
80%
Persona building
77%
Paper-prototype testing
68%
Competitive analysis
61%
Card sorting
48%
Discover
Explore


Most-Frequent UX Research Methods
Source: NN/g UX Careers Survey
In-person usability study
84%
Accessibility evaluation
62%
Remote usability study
58%
Test instructions, help
51%
Analytics review
82%
Survey
76%
Search-log analysis
47%
Test
Listen
NNGROUP.COM NN/g


Top 10 Design Tools
UX Designers Should Know
in
Xd
marvel
axure
RP
Ai
balsamiq
Ps

Design resources

- **Icons**
  - Ionicons has thousands of free icons to choose from for personal and commercial usage.
  - Font Awesome — These icons are spread across several different categories. Scalable and customizable with CSS.
  - Flaticon is one of the largest searchable icon databases with icons.
  - Fontastic — If their selection of 9,000 icons aren't enough, simply create and customize your own icon fonts with Fontastic.
  - World Vector Logo— Logo collection.

UX design inspiration

- Daily UI
- Dribbble
- Site Inspire
- Land-Book
- Call to Idea
- Media Queri

Images

- Unsplash
- Picspree
- Pixabay

Color

- Flat UI
- LOLColors
- UI Gradients
- Colors and fonts

Optimization

- Optimizilla -- compress up to 20 images
- Test My Site -- make sure your website has a mobile-friendly design, according to Google's standards.
- Lighthouse