



Prifysgol Cymru  
Y Drindod Dewi Sant  
**University of Wales**  
Trinity Saint David

BA COMPUTER GAMES DESIGN

# USER EXPERIENCE DESIGN

User Research 1



### User Research 1

#### Lecture Contents

- 1 What is User Research?
- 2 Planning Your Research
- 3 Qualitative and Quantitative Data
- 4 Addressing Bias In Data Collection & Analysis



# USER EXPERIENCE DESIGN

## User Research 1

# User Research 1

## What is User Research?



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

User research, or UX research, is an absolutely vital part of the **user experience design** process.

Typically done at the **start** of a project, it encompasses different types of research methodologies to **gather valuable data and feedback**.

When conducting user research, you'll **engage with and observe your target users**, getting to know their **needs, behaviours, and pain points** in relation to the product or service you're designing. [1]



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

Ultimately, user research means the difference between **designing based on guesswork** and assumptions, and actually **creating something that solves a real user problem** [1].



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

Ultimately, user research means the difference between **designing based on guesswork** and assumptions, and actually **creating something that solves a real user problem** [1].

In other words:

**Do NOT skip the research phase!**



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

User research is about asking users what they **think** and **feel**. This can be done **before starting a design, during the design process**, or **once the design is complete**.

**Consult users whenever possible.**

- ▶ Listen to what users say
- ▶ Find out what their problems are
- ▶ Then solve those problems



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

There are **two types of information** that can be collected from users:

**SUBJECTIVE**

and

**OBJECTIVE**



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

There are **two types of information** that can be collected from users:

**SUBJECTIVE**



**e.g.** *Do you like this?*

If 100 people like something and  
20 people don't, **this is still  
subjective data**

**and**

**OBJECTIVE**



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

There are **two types of information** that can be collected from users:

#### SUBJECTIVE



**e.g.** *Do you like this?*

If 100 people like something and 20 people don't, **this is still subjective data**

and

#### OBJECTIVE



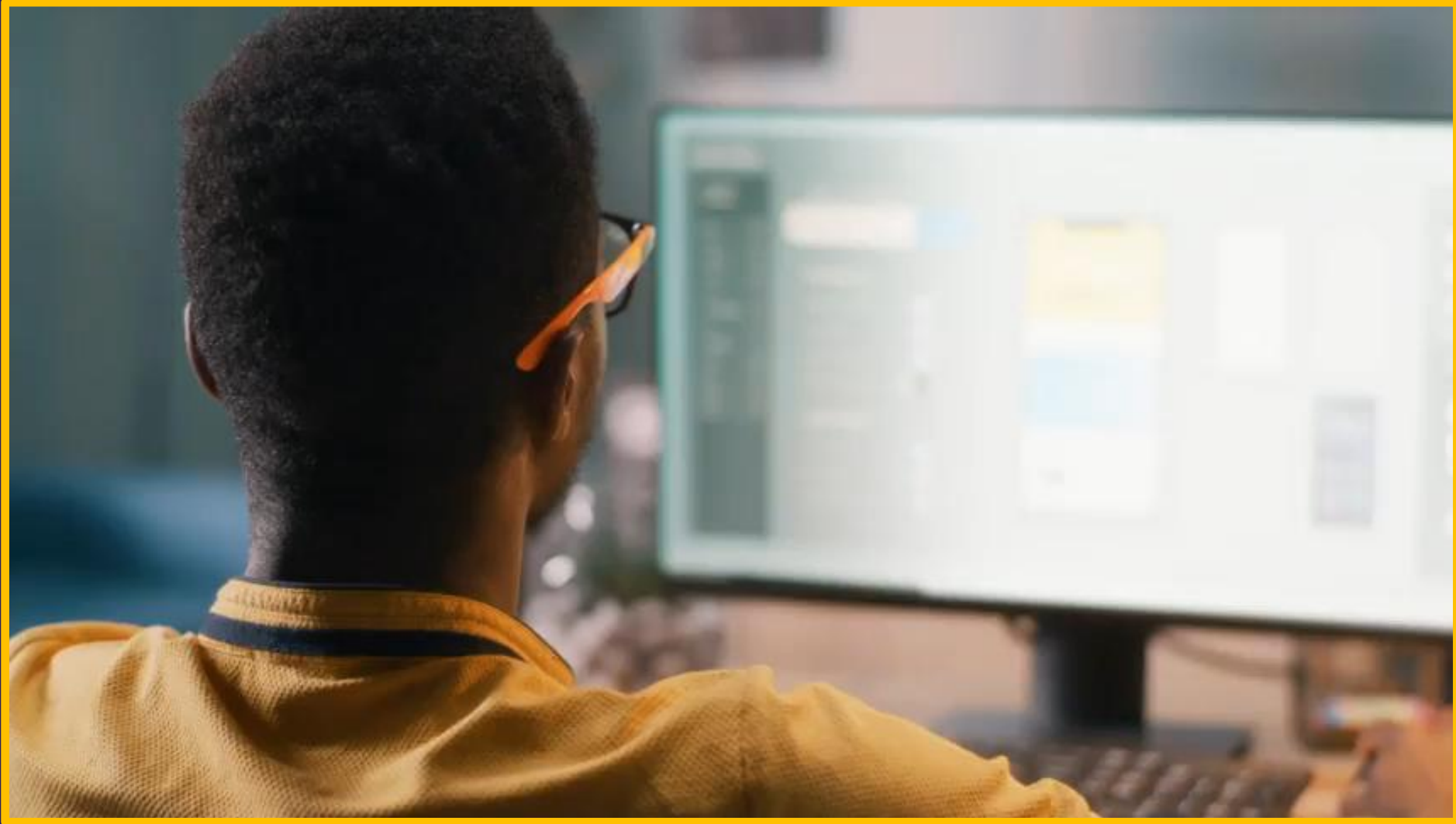
**e.g.** *Could you find a control to do this?*

These are **facts**, not **opinions**



# USER EXPERIENCE DESIGN

## User Research 1



Interaction Design Foundation – *What Is User Research?* [2]



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

The purpose of user research is to put your design project into **context**.

- It helps you **understand the problem** you're trying to solve
- It tells you **who your users are**
- It tells you **what context they'll be using your product** or service
- It tells you **what they need from you**, the designer!

UX research ensures that you are **designing with the user in mind**, which is key if you want to create a successful product. [1]



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

Throughout the design process, your UX research will aid you in many ways.

The information you collect can **help identify problems and challenges, validate or invalidate your assumptions, find patterns and commonalities across your target user groups**, and shed plenty of light on your users' **needs, goals, and mental models**.

Without UX research, **you are essentially basing your designs on assumptions**. If you don't take the time to engage with real users, it's **virtually impossible to know what needs and pain-points your design should address**. [1]



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

Here's why conducting user research is **absolutely crucial**:

There's a **misconception that it's ok to just do a bit of research and testing at the end of your project**. The truth is that **you need UX research first**, followed by usability testing and iteration throughout. This is because **research makes the design better**.



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

Here's why conducting user research is **absolutely crucial**:

**User research helps you to design better products!**

There's a **misconception** that it's ok to just do a bit of research and testing at the end of **your project**. The truth is that **you need UX research first**, followed by usability testing and iteration throughout. This is because **research makes the design better**.



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

Here's why conducting user research is **absolutely crucial**:

**User research helps you to design better products!**

There's a **misconception that it's ok to just do a bit of research and testing at the end of your project**. The truth is that **you need UX research first**, followed by usability testing and iteration throughout. This is because **research makes the design better**.

**The end goal is to create products and services that people want to use.** The mantra in UX design is that **some user research is always better than none**. [1]



# USER EXPERIENCE DESIGN

## User Research 1

### WHAT IS USER RESEARCH?

All too often, the **user research phase is seen as optional** or merely “nice-to-have”- but in reality, it's crucial from both a design and a business perspective.

The research phase ensures you're designing with **real insights and facts—not guesswork!** Imagine you release a product that has the potential to fill a gap in the market but, due to a lack of user research, is **full of bugs and usability issues**. At best, you'll have a **lot of unnecessary work to do** to get the product up to scratch. At worst, the brand's reputation will suffer.

**UX research gives the product a competitive edge.** Research shows you **how your product will perform in a real-world context**, highlighting any **issues that need to be ironed out** before you go ahead and develop it. [1]



# USER EXPERIENCE DESIGN

## User Research 1

# User Research 1

## Planning Your Research



# USER EXPERIENCE DESIGN

## User Research 1

### PLANNING YOUR RESEARCH

When **planning your user research**, it's good to **have a mix of both qualitative and quantitative data** to draw from so you don't run into issues from the **value-action gap**, which can at times make qualitative data **unreliable**.

The **value-action gap** is a well-known psychology principle outlining that people genuinely don't do what they say they would do and is commonly referred to as **what people say vs. what people do**. [1]

#### Example:

*More than 60% of participants said they were "likely" or "very likely" to buy a kitchen appliance in the next 3 months. **8 months later, only 12% had.***

*- How Customers Think, Gerald Zaltman, 2003*



# USER EXPERIENCE DESIGN

## User Research 1

### PLANNING YOUR RESEARCH

You need to do more than just User Focus Groups - **observation of your users really is the key.**

It is important to **watch** what your users **do**. [1]





# USER EXPERIENCE DESIGN

## User Research 1

### PLANNING YOUR RESEARCH

Part of being a great user researcher is to be an expert at **setting up the right questions** and getting **unbiased answers** from your users.

Put yourself in your user's shoes **without your own preconceptions** and assumptions on **how it should work and what it should be**. For this, we need **empathy** (and good listening skills) allowing you to **observe and challenge assumptions** of what you already think you know about your users.

Be open to some surprises! [1]



# USER EXPERIENCE DESIGN

## User Research 1

### PLANNING YOUR RESEARCH

Part of being a great user researcher is to be an expert at **setting up the right questions** and getting **unbiased answers** from your users.

**To do this, we need to *think* like the user.**

Put yourself in your user's shoes **without your own preconceptions** and assumptions on **how it should work and what it should be**. For this, we need **empathy** (and good listening skills) allowing you to **observe and challenge assumptions** of what you already think you know about your users.

Be open to some surprises! [1]



# USER EXPERIENCE DESIGN

## User Research 1

### PLANNING YOUR RESEARCH

User research can be conducted through various methods such as **surveys, interviews, observations, and usability testing**. The method chosen depends on the **research goals** and the **resources available**.

Typically, user research involves **defining research objectives, recruiting participants, creating research protocols, conducting research activities, analyzing data, and reporting findings**.

Good user research is characterized by **clear research goals, well-defined research protocols**, appropriate sampling methods, unbiased data collection, and rigorous data analysis. [1]



# USER EXPERIENCE DESIGN

## User Research 1

# User Research 1

## Qualitative and Quantitative Data



# USER EXPERIENCE DESIGN

## User Research 1

### QUALITATIVE AND QUANTITATIVE DATA

At its simplest, research and its data can be broken down into **two different categories**:



**QUALITATIVE**

and



**QUANTITATIVE**

Qualitative and quantitative data **differ in their approach** and the **type of data** they collect. [3]



# USER EXPERIENCE DESIGN

## User Research 1

### QUALITATIVE DATA OVERVIEW

Qualitative data analysis **describes information** and **cannot be measured or counted**. It refers to the **words or labels** used to describe certain characteristics or traits. You would turn to qualitative data to answer the "**why?**" or "**how?**" questions. It is often used to investigate **open-ended studies**, allowing participants (or customers) to **show their true feelings** and actions **without guidance**.

Qualitative data is gathered through **interviews or observations** and analyzed by **categorizing information** to **understand themes and insights**.

#### Examples of Qualitative data:

- **Why do people prefer** using one product over another?
- **How do customers feel about** their customer service experience?
- **What do people think about** a new feature in the app?





# USER EXPERIENCE DESIGN

## User Research 1

### QUANTITATIVE DATA OVERVIEW

Quantitative data refers to any information that can be **quantified** — that is, **numbers**. If it can be **counted or measured**, and **given a numerical value**, it's **quantitative** in nature. Quantitative variables can tell you "**how many**," "**how much**," or "**how often**."

Quantitative data is collected through methods like **surveys and experiments** and analyzed statistically to **identify patterns** [3].

#### Examples of Quantitative data:

- **How many** people attended last week's webinar?
- **How much** revenue did our company make last year?
- **How often** does a customer rage click on this app?





# USER EXPERIENCE DESIGN

## User Research 1

### QUALITATIVE RESEARCH METHODS [1]:

- **Guerrilla testing:** Fast and low-cost testing methods such as on-the-street videos, field observations, reviews of paper sketches, or online tools for remote usability testing.
  - **Interviews:** One-on-one interviews that follow a preset selection of questions prompting the user to describe their interactions, thoughts, and feelings in relation to a product or service, or even the environment of the product/service.
  - **Focus groups:** Participatory groups that are led through a discussion and activities to gather data on a particular product or service.
- **Guerrilla testing**
  - **Interviews**
  - **Focus groups**
  - **Field Studies**
  - **In-lab testing**
  - **Card sorting**



# USER EXPERIENCE DESIGN

## User Research 1

### QUALITATIVE RESEARCH METHODS [1]:

- **Field Studies:** Heading into the user's environment and observing while taking notes (and photographs or videos if possible).
- **In-lab testing:** Observations of users completing particular tasks in a controlled environment. Users are often asked to describe out loud their actions, thoughts, and feelings and are videoed for later analysis.
- **Card sorting:** Used to help understand **Information Architecture** and naming conventions better. Can be really handy to sort large amounts of content into logical groupings for users.

- Guerrilla testing

- Interviews

- Focus groups

- **Field Studies**

- **In-lab testing**

- **Card sorting**



# USER EXPERIENCE DESIGN

## User Research 1

### QUALITATIVE DATA: PROS AND CONS

#### Advantages of qualitative data [3]

- ▶ Qualitative data offers **rich, in-depth insights** and allows you to **explore context**.
- ▶ It is great for **exploratory purposes**.
- ▶ Qualitative research delivers a **predictive element** for continuous data.



# USER EXPERIENCE DESIGN

## User Research 1

### QUALITATIVE DATA: PROS AND CONS

#### Disadvantages of qualitative data [3]

- ▶ It's not a **statistically representative** form of data collection because it relies upon the **experience of the host** (who can lose data).
- ▶ It can also require **multiple data sessions**, which can lead to **misleading conclusions**.



# USER EXPERIENCE DESIGN

## User Research 1

### QUANTITATIVE RESEARCH METHODS [1]

- **User surveys:** Questionnaires with a structured format, targeting your specific user personas. These can be a great way to get a large amount of data.
  - **First click testing:** A test set up to analyse what a user would click on first in order to complete their intended task. This can be done with paper prototypes, interactive **wireframes** or an existing website.
  - **Eye tracking:** Measures the gaze of the eye, allowing the observer to 'see' what the user sees. This can be an expensive test and **heatmapping** is a good cheaper alternative.
- **User Surveys**
  - **First Click Testing**
  - **Eye Tracking**
  - **Heatmapping**
  - **Web Analytics**
  - **A/B Testing**



# USER EXPERIENCE DESIGN

## User Research 1

### QUANTITATIVE RESEARCH METHODS [1]

- **Heatmapping:** Visual mapping of data showing how users click and scroll through your prototype or website.
  - **Web analytics:** Data that is gathered from a website or prototype it is integrated with, allowing you to see the demographics of users, page views, and funnels of how users move through your site and where they drop off. The most well-known online tool to integrate would be **Google Analytics**.
  - **A/B testing:** Comparing two versions of a web page to see which one converts users more. This is a great way to test button placements, colours, banners, and other elements in your UI.
- User Surveys
  - First Click Testing
  - Eye Tracking
  - **Heatmapping**
  - **Web Analytics**
  - **A/B Testing**



# USER EXPERIENCE DESIGN

## User Research 1

### QUANTITATIVE DATA: PROS AND CONS

#### Advantages of quantitative data [3]

- ▶ It is relatively **quick and easy to collect** and it's **easier to draw conclusions** from.
- ▶ When you collect quantitative data, the type of **results will tell you which statistical tests are appropriate** to use.
- ▶ As a result, **interpreting your data and presenting those findings is straightforward** and less open to **error and subjectivity**.
- ▶ It can be **replicated**. Replicating a study is possible because **your data collection is measurable** and tangible for further applications.



# USER EXPERIENCE DESIGN

## User Research 1

### QUANTITATIVE DATA: PROS AND CONS

#### Disadvantages of quantitative data [3]

- ▶ Quantitative data **doesn't always tell you the full story** (no matter what the perspective).
- ▶ With choppy information, **it can be inconclusive**.
- ▶ Quantitative research can be **limited**, which can lead to **overlooking broader themes and relationships**.
- ▶ By focusing solely on numbers, there is a **risk of missing larger focus information** that can be beneficial.



# USER EXPERIENCE DESIGN

## User Research 1

# User Research 1

## Addressing Bias in Data Collection & Analysis



# USER EXPERIENCE DESIGN

## User Research 1

### ADDRESSING BIAS IN DATA COLLECTION & ANALYSIS

While both quantitative and qualitative data provide valuable insights, it's important to recognize that **both are susceptible to bias**. Understanding and mitigating these biases is crucial for conducting **reliable research** and drawing **accurate conclusions**.

In **quantitative** research, **selection bias is a common concern**. This occurs when the data collected **isn't truly representative of the population being studied**, potentially leading to **skewed results**. For instance, an **online-only survey might exclude demographics with limited internet access** [3].





# USER EXPERIENCE DESIGN

## User Research 1

### ADDRESSING BIAS IN DATA COLLECTION & ANALYSIS

While both quantitative and qualitative data provide valuable insights, it's important to recognize that **both are susceptible to bias**. Understanding and mitigating these biases is crucial for conducting **reliable research** and drawing **accurate conclusions**.

**Qualitative** research faces its own bias challenges. **Researcher bias** can influence data interpretation, while **participant selection bias might result in missing important perspectives**. Additionally, participants might **alter their responses** based on what **they think the researcher wants to hear** [3].





# USER EXPERIENCE DESIGN

## User Research 1

### ADDRESSING BIAS IN DATA COLLECTION & ANALYSIS

To address these issues [3]:

- **Use careful sampling methods** in quantitative studies
- Employ strategies like **triangulation and reflexivity** in qualitative research
- Consider **mixed methods approaches** when possible
- **Be transparent about potential limitations** in your research



# USER EXPERIENCE DESIGN

## User Research 1

### ADDRESSING BIAS IN DATA COLLECTION & ANALYSIS

*“**Triangulation** refers to the use of **multiple methods or data sources** in qualitative research to develop a **comprehensive understanding of phenomena** (Patton, 1999). Triangulation also has been viewed as a qualitative research strategy to **test validity** through the **convergence of information from different sources**.” [4]*

*“we define **reflexivity** as a set of continuous, collaborative, and multifaceted practices through which researchers **self-consciously critique, appraise, and evaluate how their subjectivity and context influence the research processes**.” [5]*

By acknowledging and **actively working to minimize bias** in both quantitative and qualitative research, researchers can **enhance the validity and reliability of their findings**, leading to more **accurate and useful** insights [3].



# USER EXPERIENCE DESIGN

## User Research 1

# User Research Bibliography



# USER EXPERIENCE DESIGN

## User Research 1

### BIBLIOGRAPHY

- [1] De Luca, J. (2023). Career Foundry. *What Is User Research, and What Is Its Purpose?* [Online]  
<https://careerfoundry.com/en/blog/ux-design/the-importance-of-user-research-and-how-to-do-it/>  
Accessed 23/10/2024
- [2] Interaction Design Foundation. (no date). *Emotional Response* [Online]  
[https://www.interaction-design.org/literature/topics/emotional-response#examples\\_of\\_emotional\\_responses\\_in\\_ux\\_design](https://www.interaction-design.org/literature/topics/emotional-response#examples_of_emotional_responses_in_ux_design)  
Accessed 23/10/24
- [3] Fullstory Team. (2024). Fullstory Blog. *Qualitative vs. quantitative data in research: what's the difference?* [Online]  
<https://www.fullstory.com/blog/qualitative-vs-quantitative-data/>  
Accessed 25/10/24
- [5] Carter et. Al. (2014). National Library of Medicine. *The use of triangulation in qualitative research.* [Online]  
<https://pubmed.ncbi.nlm.nih.gov/25158659/#:~:text=Abstract,of%20information%20from%20different%20sources>  
Accessed 28/10/24
- [6] Olmos Vega, M. F (2022) Medical Teacher Volume 45, 2023 - Issue 3. *A practical guide to reflexivity in qualitative research: AMEE Guide No. 149*  
<https://www.tandfonline.com/doi/full/10.1080/0142159X.2022.2057287#abstract>  
Accessed 28/10/24



Prifysgol Cymru  
Y Drindod Dewi Sant  
**University of Wales**  
Trinity Saint David

BA COMPUTER GAMES DESIGN

# USER EXPERIENCE DESIGN

User Research 1